JAN, 15/91

JAN. 15/91

THE CORPORATION OF THE CITY OF PORT COQUITLAM

ENVIRONMENTAL PROTECTION COMMITTEE

Tuesday, January 15, 1991

Second Floor Meeting Room
2580 Shaughnessy Street, Port Coquitlam, BC

5:00 p.m.

AGENDA

PERSONNEL IN ATTENDANCE:

ITEM I: CONFIRMATION OF MINUTES OF PREVIOUS MEETING

ITEM II: COLONY FARMS
(Reconsideration of information presented January 9, 1991)

ITEM III: ORGANIC FOODS
(Verbal update by Deputy City Engineer)

ITEM IV: PERMANENT SIGNS - PORT COQUITLAM RIVER FLOOD CONTROL PROJECT
(Correspondence from Environment Canada October 24, 1990)

ITEM V: SOIL CONTAMINATION - RIVERWOOD LAGOONS
(Memo from Deputy City Engineer, dated November 19, 1990 Attached)

ITEM VI: NOTICE & DRAFT ENVIRONMENTAL ASSESSMENT PROCEDURES FOR RAILWAYS
(Memo from Deputy City Engineer, dated November 29, 1990 Attached)

ENVIRONMENTAL PROTECTION COMMITTEE AGENDA Cont'd...

ITEM VII: PARALLEL RUNWAY PROJECT
(Correspondence from Transport Canada dated September 20, 1990 and December 20, 1990 attached)

ITEM VIII: CALGARY ROSEGARDENS
(Memo from Deputy City Engineer dated December 13, 1990 attached)

ITEM IX: SHELL SERVICE STATION - SHAUGHNESSY & PITT RIVER ROAD, INVESTIGATION OF POSSIBLE FUEL LEAK
(Memo from Deputy City Engineer dated December 10, 1990)

ITEM X: GVRD -- APPLICATIONS TO EMIT AIR CONTAMINANTS, SPECIAL WASTE STORAGE, EFFLUENT & REFUSE DISCHARGES
(Report from GVRD dated December 7, 1990 attached)

ITEM XI: PITCH-IN CAMPAIGN - REQUEST FOR GRANT
(Correspondence from Pitch-In B.C. dated December 11, 1990 attached)

ITEM XII: SHARE SOCIAL SERVICES
(Deputy Engineer will present brochure)

ITEM XIII: "POWER SMART" ENERGY EFFICIENCY PROGRAM
(Deputy Engineer will present package)

ITEM XIV: CANADIAN PULP & PAPER ASSOCIATION
(Correspondence dated November 30, 1990)

ITEM XV: B.C. ROUND TABLE ON THE ENVIRONMENT & THE ECONOMY
(Correspondence dated November, 1990)

ENVIRONMENTAL PROTECTION COMMITTEE AGENDA Cont'd...

ITEM XVI: FLAX PULP MILL IN SURREY - ENVIRONMENTAL ASSESSMENT BRANCH
(Correspondence dated November 6, 1990)
NOTE: COPY OF REPORT IS IN ALDERMEN'S LOUNGE

ITEM XVII: RECYCLING VIDEO - GLAD
(To be shown if time permits)

THE CORPORATION OF THE CITY OF PORT COQUITLAM

ENVIRONMENTAL PROTECTION COMMITTEE

MINUTES

A meeting of the Environmental Protection Committee was held in the Second Floor Meeting room, 2580 Shaughnessy Street, Port Coquitlam, on Tuesday, January 15, 1991 at 5:00 p.m.

In attendance were:

Alderman J. Keryluk, Chairman
Alderman R. Talbot,
C.F. Gaudry, P. Eng., Deputy City Engineer

ITEM I: CONFIRMATION OF MINUTES

The Minutes of the Environmental Protection Committee Meeting held Wednesday, January 9, 1991, at 5:00 p.m. be considered, read, and adopted.

Carried

ITEM II: COLONY FARMS

The Committee was awaiting further information from Mr. Paul Dutton concerning Colony Farm. At the date and time of the meeting no further information had been received therefore, the matter was tabled pending receipt of further information from Mr. Dutton.

Cont'd /2...

ITEM III: ORGANIC FOODS

The Committee received a verbal report from the Deputy City Engineer regarding the concept of organic foods. The Committee was advised that the rules governing the inclusion of the words 'organic foods' on various products will be checked into and will form part of the report back to Committee. It is anticipated to take 4-6 weeks to complete this report.

ITEM IV: PERMANENT SIGNS - PORT COQUITLAM RIVER FLOOD CONTROL PROJECT

The Committee considered a report from the Deputy City Engineer regarding a request from Environment Canada to erect two signs. The report explained that in 1990 the Provincial Government and the City completed upgrading and restoration of the dyke on the Coquitlam River between Kingsway Avenue and the McAllister Avenue footbridge. In conjunction with this upgrading, special fish habitant enhancement features were added that included the following:

Eco Cells- Planted with local riverine vegetation to provided food, cover and shade for fish.

Rock Groins & Boulder Groupings - To create protective and resting areas for fish.

A fish rearing channel downstream which provides additional habitat for juvenile salmon.

Environment Canada has asked to erect two signs in the vacinity of the fish habitant enhancement area to notify the public of the works completed. The signs would be installed and maintained by Environment Canada.

The Committee also learned that the fish habitant enhancement areas will be inspected in the summer of 1991 to determine if they suffered any damage during the high river flows in November/December of 1990 floods.

The Committee therefore recommended that Council approve a request from Environment Canada to erect two signs between the McAllister pedestrian bridge and the Kingsway bridge to explain the Coquitlam River Flood Control Work and Fish Habitant Enhancement.

Cont'd .../3

ENVIRONMENTAL PROTECTION COMMITTEE MEETING MINUTES Cont'd...

ITEM V: SOIL CONTAMINATION - RIVERWOOD LAGOONS

Committee considered a report from the Deputy City Engineer dated November 19, 1990 regarding the Riverwood Sanitary Sewer Lagoons and Soil Contamination. Committee has delt with this report on one previous occasion and it was brought back only as a reference for a verbal update from the Deputy City Engineer. Committee was told that the consulting engineers involved, Hamilton & Associates were in touch with the City and advised they would be undertaking more detailed environmental engineering studies and would be submitting their information to the City when available. This information will be submitted to Committee as soon as it is available.

ITEM VI: NOTICED AND DRAFT ENVIRONMENTAL ASSESSMENT PROCEDURES FOR RAILWAYS

The Committee considered a report from the Deputy City Engineer dated January 16, 1991 concerning changes to Environmental Assessment Procedures as well as Cost Sharing Agreements. The Committee learned that the National Transportation Agency of Canada notified the City of two important changes:

1) All applications regarding work on railway's property must contain a full environmental assessment prior to consideration on their part. Although the requirement for these assessments has been in existence since 1984 it has only been recently mandated as a result of court decisions on the Old Man River and Rafferti Elevated Dam cases where the federal government was challenged on incomplete environmental assessments.

2) The agency re-drafted the guidelines on aportionment of costs of grade separations and adopted them on October 23, 1990. For basic grade separations the following cost breakdown would normally be applied:

   1) On projects due primarily to Highway Development
      - 85% Highway Authority, 15% Railway Company

   2) On projects were both Highway and Railway Development has contributed largely to the need for the project.
      - 50% Highway Authority, 50% Railway Company

   3) On projects due primarily to railway development.
      - 15% Highway Authority, 85% Railway Company

Cont'd /4...

ENVIRONMENTAL PROTECTION COMMITTEE MINUTES Cont'd...

Committee reviewed the old National Transportation Act and Railway Act General Order #E5 where previous applications for cost sharing of great separations were made to. The main difference in the new guidelines compared to the old E5 Order is elimination of the Federal Government sponsored Railroad Grade Crossing Fund in favor of only the railway and highway authorities spliting the costs.

The Committee recommended the information be sent to Council for information.

ITEM VII: VANCOUVER AIRPORT - PARALLEL RUNWAY PROJECT

Committee considered a report from the Deputy City Engineer dated January 16, 1991 regarding the planned expansion to the Vancouver International Airport. The City received correspondence from Transport Canada dated September 20, 1990 and December 20, 1990 outlining the current status of the Environmental Impact Study on the proposed Parallel Runway Project at the Vancouver International Airport. The Environment Impact Assessment is continuing and a Federal Environmental Assessment Review Panel will hold public hearings commencing January 28, 1991 into the full impact on communities of the proposed expansion to the airport. The Environmental Protection Committee will continue to deal with all information received on the project. The Committee did not have any concerns they wished to relay to the Panel at this time.

The Committee wanted to assure Council that if anyone has any concerns we can write directly to the Federal Environment Assessment Review Panel or make a presentation at one of the public hearings. The Committee asked that this information be provided to Council for information.

ITEM VIII: CALGARY ROSE GARDENS

Committee considered information on rose gardens and other gardening items in a memo from the Deputy City Engineer dated December 13, 1990. Staff was instructed to check with the Vancouver Rose Society, gather as much information as was practical and pass it along to the Port Coquitlam Garden Club. Further, representatives of the Garden Club are be invited to speak with the Committee sometime in April or May.

Cont'd .../5

ITEM IX: SHELL SERVICE STATION - SHAUGHNESSY AND PITT RIVER ROAD INVESTIGATION OF POSSIBLE FUEL LEAK

The Committee considered a report from the Deputy City Engineer dated December 10, 1990. Committee was told that the Engineering Department were advised that possibly some years ago a fuel spill had occurred in the vacinity of Shaughnessy and Pitt River Road near the new Shell service station. Since the City was about to commence construction of a sanitary sewer force main through the main immediately north of the Shell service station the Engineering Department contacted Shell Oil and asked them to investigate the possible leak. After discussions with Shell Oil, their consulting engineering company, Morrow Engineering of North Vancouver, it was determined that if their had been a fuel spill it was several years ago and any effects had been anticipated throughout the years. There is no current evidence of a fuel leak or spill.

ITEM X: G.V.R.D. - APPLICATIONS TO EMIT AIR CONTAMINANTS SPECIAL WASTE STORAGE, EFFLUENT AND REFUSE DISCHARGES

The Committee considered reports from the G.V.R.D. dated December 7, 1990 regarding the discharge of waste in the Greater Vancouver Region. The reports all applications for companies or individuals to emit air contaminants, affluent and refuse discharges as well as the storage of special wastes. The Committee felt the information valuable but suggested that in order to streamline some of the volume of paper that staff look at the various applications and report to Committee only those from Port Coquitlam as well as any others from other municipalities that may affect Port Coquitlam.

Committee also asked for a representative from Esco Ltd., 1855 Kingsway Avenue, to attend one of the next meetings of EPC.

ITEM XI: PITCH IN CAMPAIGN - REQUEST FOR GRANT

Committee considered a report from Deputy City Engineer dated January 16, 1991 regarding the request from Outdoors Unlittered for a $600 Grant towards the 1991 Pitch In Campaign. Committee was advised that Pitch In British Columbia is one of the programs sponsored by Outdoors Unlittered. The Pitch In Week which is held in May of each year encourages organized litter pick up, clean up and recycling programs throughout the province. It is estimated that last year alone over 500,000 British Columbia residents actively participated in some part of the Pitch In Campaign during the week of May 7-13, in 1990.

Cont'd .../6

ENVIRONMENTAL PROTECTION COMMITTEE MINUTES Cont'd...

The Environmental Protection Committee strongly supports the Pitch In Campaign and the Committee will continue to monitor and co-ordinate the Pitch In Campaign with other city activities. Once the information kits have been distributed throughout the province the Committee will finalize plans for Port Coquitlam's participation and advise Council. The Committee anticipates reporting back to Council April 1991.

The Committee therefore recommends that Council approve a contribution of $600 to Pitch In British Columbia for the 1991 year.

ITEM XII: SHARE SOCIAL SERVICES

The Committee considered information from the Share Social Services Program. The information outlined the Share Annual General Meeting of June 1, 1990 as well as promotional literature regarding their several worthwhile programs. The Committee received and filed the information.

ITEM XIII: POWER SMART ENERGY EFFICIENCY PROGRAM

The Committee considered the proposal from B.C. Hydro dated November 29, 1990. It basically outlined past programs in which municipal governments along with other B.C. consumers were asked in 1989 to support the utilities ten year efficiency program which would free up 2.4 billion kilowatt hours of electricity (enough energy to support a city the size of greater Victoria). More efficient energy usage as opposed to building major new generation facilities, is not only environmentally acceptable but also more cost effective.

The City of Port Coquitlam has been very conscious of Hydro Energy Conservation over the past number of years. Some of our recreational facilities have been fitted with computer controlled energy conservation devices that over time will save the City considerable money. Energy audits will be undertaken (some are done) of other municipal buildings and will be part of the report back to Council.

The energy audits are conducted by B.C. Hydro and consultants at no cost to the City. The Committee strongly supports the past efforts of the City in their energy conservation programs and encourages Council to approve this resolution.

Cont'd .../7

Therefore, the Committee recommends that the Council give authority for a report to be prepared for their consideration, outlining the following:

a) A draft electrical energy efficiency policy,

b) A statement on the budgetary ramifacations, if any of the adoption of such a policy,

c) An implementation strategy for the policy, and

d) Any 1991 (or future) budget ramifications.

ITEM XIV: CANADIAN PULP AND PAPER ASSOCIATION

The Committee considered information from the Canadian Pulp and Paper Association dated November 30, 1990. The pulp and paper industry of Canada has prepared a brochure titled "From the Forests of Canada to the Markets of the World" and addresses three intergrated issues: The Forestry Resource, Mill Operations and Recycling. The Committee received and filed the information.

ITEM XV: B.C. ROUND TABLE ON THE ENVIRONMENT AND THE ECONOMY

The Committee reviewed information received December 27, 1990 from the British Columbia Round Table on the environment and the economy. The information kit included primary information on the Round Table, its mandate and its members. Committee received and filed the information.

ITEM XVI: FLAX PULP MILL IN SURREY - ENVIRONMENTAL ASSESSMENT BRANCH

The Committee considered information from the B.C. Environment, Environmental Assessment Branch dated November 6, 1990 concerning a proposed flax pulp mill in Surrey. The information outlined the proposed development of a 20 tonne per day flax pulp mill in the Port Kells Industrial Area of Surrey. Technical information was reviewed and the Committee received and filed the information.

ITEM XVII: RECYCLING VIDEO - GLAD

Do to the lateness of the meeting, Committee elected to see the Glad Promotional Video on Saturday, January 19, 1991.

ITEM XVIII NEW BUSINESS

1) An update is requested for the Intrawest development site at the corner of Shaughnessy and Lougheed Highway. What is the status of the environmental investigation and bitigating arrangements.

The Meeting Adjourned at 6:55 p.m.

I.R. Zahynacz, P. Eng.
City Engineer
KIP GARDEN
DEPUTY CITY ENGINEER

Alderman J. Keryluk
Committee Chairman

CFG:ck

NOTE: Minutes not read and adopted by the Committee until certified correct by the Committee Chairman's signature.

cc: Mayor and Aldermen
City Administrator

Environmental Protection Committee
City of Port Coquitlam

Jan. 9, 1991

Poco Citizens for Colony Farm would like to recommend that your committee take to City Council motions similar to the following:

> that given that Colony Farm is the last significant green space in Port Coquitlam, the Environmental Protection Committee would like to move that this Council should both in principle and actively work towards its preservation.
>
> To this end we further move that the Council send to Mr. Robert E. Collis, Executive Director of the B.C. Racing Commission, a letter stating that Port Coquitlam is not interested in a horse race-track being placed in Colony Farm.

We shall try to set out at greater length at our meeting today the sound environemtal reasons for Council and your committee to work towards the preservation of Colony Farm as a green space.

Citizens in attendance:

Mrs. Doris Wilcox, Mr. Greg Archibald, Paul Dutton

REQUEST FOR PROPOSALS

also racing in the province for 2 years

The British Columbia Racing Commission has been authorized by the Provincial Government to invite proposals from interested parties, for the construction of a one mile race track and related facilities, to serve the people of the Greater Vancouver Regional District and Fraser Valley.

Response Procedure

On or before December 15, 1990, parties should file a letter expressing interest with the British Columbia Racing Commission, asking for detailed instructions and information on criteria for submitted proposals.

On or before March 1, 1991, those wishing to make a proposal containing specific details must file their proposal with the British Columbia Racing Commission.

As a result of proposals received on or before March 1, 1991, the British Columbia Racing Commission will enter into correspondence or discussion with those parties whose proposals merit further consideration.

For further information, contact:

Robert E. Collis
Executive Director
British Columbia Racing Commission
#200, 4595 Canada Way
Burnaby, B.C. V5G 4L9
Phone (604) 660-7400
FAX (604) 660-7414

Province of British Columbia

Ministry of Solicitor General

Province of
British Columbia

Ministry of
Solicitor General

British Columbia
Racing Commission
Second Floor
4595 Canada Way
Burnaby
British Columbia
V5G 4L9
Telephone: (604) 660-7400
Fax: (604) 660-7414

November 14, 1990

Mayor Louis Sekora
The District of Coquitlam
1111 Brunette Ave.
Coquitlam, B.C.
V3K 1E9

Dear Mayor Sekora:

Thank you for your letter of November 1, 1990 relative to the Commission's endeavour to have a new one-mile track constructed in the Lower Mainland.

You may be assured this Commission believes it necessary to have local government concurrence before embarking on a major project like a new thoroughbred racing facility. You will be kept informed if there are any proposals involving the District of Coquitlam.

Yours truly,

ROBERT E. COLLIS,
Executive Director

REC/eb

Province of
British Columbia

NEWS RELEASE

MINISTRY OF SOLICITOR GENERAL

90:24

FOR IMMEDIATE RELEASE
1990 OCT 24

PROVINCE CALLS FOR RACE TRACK PROPOSALS

VICTORIA -- The B. C. Racing Commission has been given the green light by cabinet to call for proposals for construction of a one-mile race track to serve the Lower Mainland area, Solicitor General Russell Fraser announced today.

"One of the criteria is that the proposed facility must be acceptable to the local governments potentially affected," said Fraser.

"The Province recognizes the importance of the horse racing industry and is prepared to assist with meeting the debt servicing of a new facility by foregoing two percentage points of its share of the thoroughbred handle for a ten-year period," Fraser said, "No other government contibution will be made."

The Minister noted, "In view of the Province's willingness to assist in this project, it is imperative the proponent provide solid evidence of financial capability."

The B.C. Racing Commission will be advertising for proponents of new track facilities. Those expressing interest will be asked to make a proposal, providing specific details, no later than March 1st, 1991.

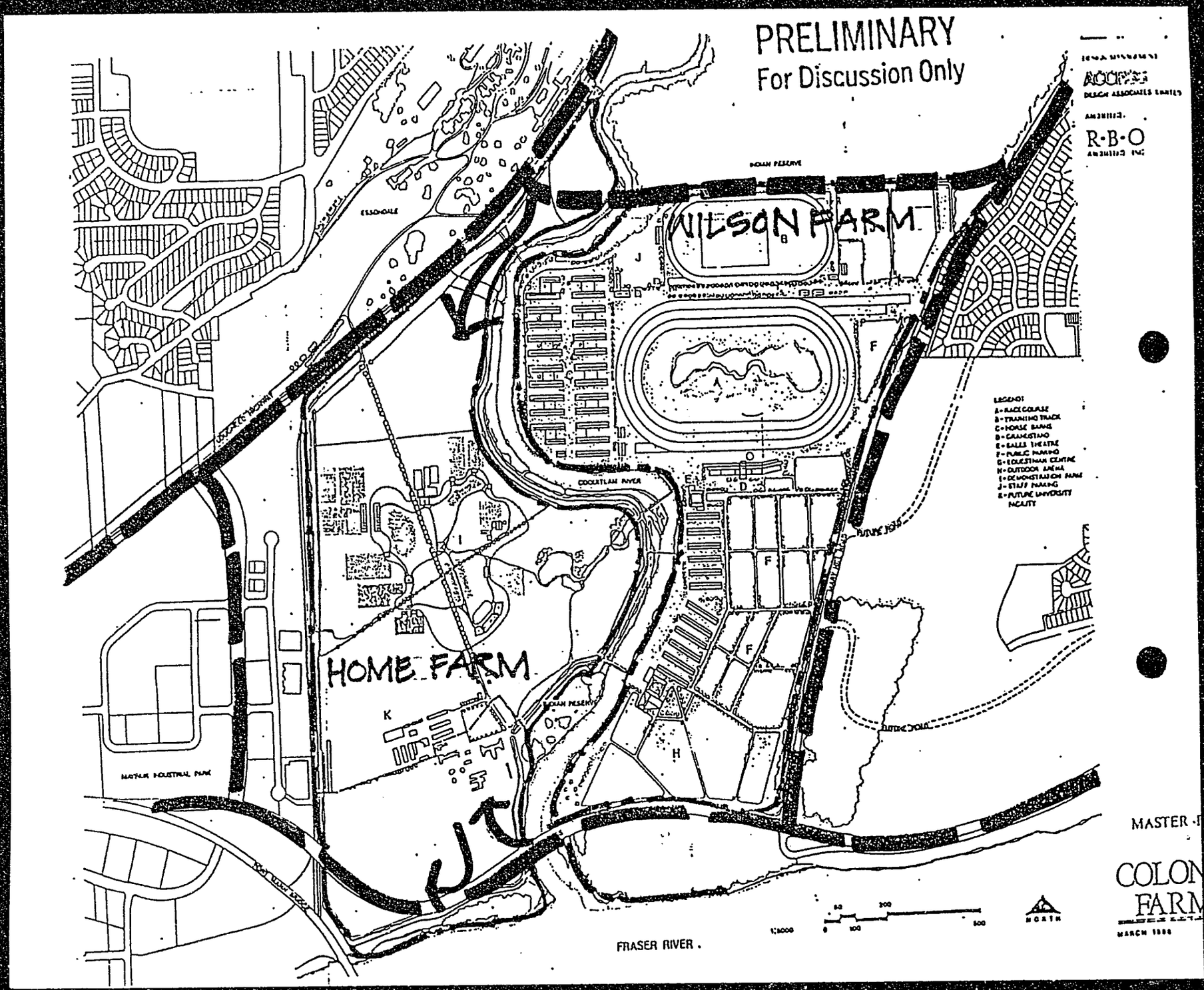
Thereafter, final recommendations will be made by the Racing Commission.

"If there is a realistic possibility of private sector operation of a new one-mile facility, this government is doing all that is reasonably within its power to accommodate that possibility," Fraser said.

-30-

CONTACT:

Mr. Robert Collis
B.C. Racing Commission
660-7400


PRELIMINARY
For Discussion Only
R·B·O
WILSON FARM
HOME FARM
FRASER RIVER
MASTER
COLON
FARM
MARCH 1988

Mr. John Keryluk,
Chairman, Environment Committee,
The City of Port Coquitlam,
2272 McAllister,
Port Coquitlam, B.C. V3C 2A8

17.12.90

Dear Mr. Keryluk,

A delegation of Poco Citizens for Colony Farm would like to meet with you and your sub-committee on the environment within the next two or three weeks. We have some suggestions to make on future Council actions and resolutions on Colony Farm.

Sincerely Yours,

Paul Dutton,
1441 Elinor Cresc.,
Port Coquitlam V3C 2Y3

tel: 941-8752

THE CORPORATION OF THE
CITY OF PORT COQUITLAM

MEMORANDUM

TO: B.R. Kirk,
City Administrator

DATE: January 16, 1991

FROM: C.F. Gaudry, P. Eng.,
Deputy City Engineer

SUBJECT: **PERMANENT SIGNS - PORT COQUITLAM RIVER FLOOD CONTROL PROJECT**
(Environmental Protection Committee, January 15, 1991)

Recommendation:

That Council approve a request from Environment Canada to erect two signs between the McAllister pedestrian bridge and the Kingsway bridge to explain the Coquitlam River Flood Control Work and fish habitat enhancement between the Kingsway Avenue bridge and the McAllister Avenue footbridge.

Background and Comments:

In 1990 the Provincial Government and the City completed upgrading and restoration of the dyke on the Coquitlam River between Kingsway Avenue and the McAllister Avenue footbridge. In conjunction with this upgrading, special fish habitat enhancement features were added that included the following:

Eco-cells - planted with local riverine vegetation to provide food, cover, and shade for fish.

Rock groins and boulder groupings - to create protective and resting areas for fish.

A fish rearing channel downstream which provides additional habitat for juvenile salmon.

The fish habitat enhancement areas will be inspected in the summer of 1991 to determine if they suffered any damage during the high river flows in November/December of 1990.

The signs will be installed and maintained by Environment Canada.

C.F. (Kip) Gaudry, P. Eng.
Deputy City Engineer

CFG:gc

Environment Canada | Environnement Canada

Conservation and Protection
Water Planning and Management Branch
Inland Waters
Pacific and Yukon Region
224 West Esplanade
North Vancouver, BC
V7M 3H7

Your file *Votre reference*

Our file *Notre reference*

October 24, 1990

405-142

Distribution List

Dear Sirs:

Re: Coquitlam River Flood Control Project

Attached are two examples of signs (labelled A and B) that the FRFC Program is proposing to erect for the Coquitlam River flood control work between the Kingsway Avenue bridge and the McAllister Avenue footbridge. On behalf of A. Brown, Project Manager for the Coquitlam Project, I am soliciting your comments/suggestions on these signs; i.e. wording, design, layout, location, etc.

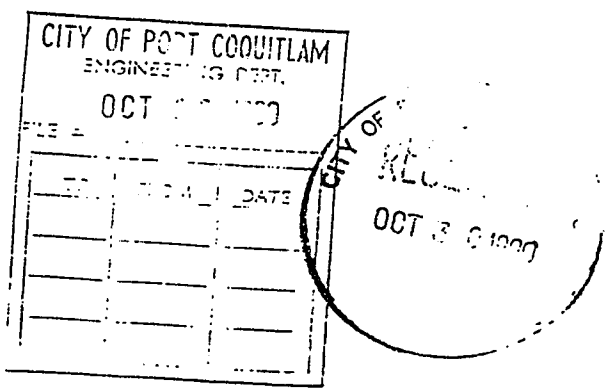
To capture the attention of the main pedestrian traffic in the area, our initial intention is to place a sign A midway on the left bank, a sign B just below Kingsway bridge on the left bank, and a sign B on each side of the McAllister footbridge. This may be an overkill! Do you have any preference for sign A or B or both and their location?

Hoping to hear from you shortly, say by November 8. I may be reached at 666-0862 or by fax at 666-3325.

Yours truly,

D. J. Bernard
Water Impact Assessment Officer

Att.



Canada

Environment Canada Environnement Canada

Distribution List:

Mr. A. Brown, BC Water Management Branch
Mr. S. Gunadasa, Associated Engineering (BC) Ltd.
Mr. L. Retfalvi, Canadian Wildlife Service
Mr. I. Zahynacz, City of Port Coquitlam
Mr. B. Cox, Fish & Wildlife Branch, Surrey
Mr. K. Johansen, Fisheries and Oceans Canada
Mr. J. Leong, Inland Waters

MEMORANDUM–Note de Service

DATE Oct 25/90

TO Pour	NAME Nom: I. Zahynacz	
	LOCATION Emplacement	TELEPHONE NO Nº de Telephone
FROM Origine	NAME Nom: D. Bernard	
	LOCATION Emplacement	TELEPHONE NO Nº de Telephone

This attached memo may be presamptuous on our part but we are hoping the City of Port Coquitlam would welcome having signs erected (by us) for the area in question. If this is a problem or a formal request has to be made please let me know. I can be reached at 666-0862.

Thank you

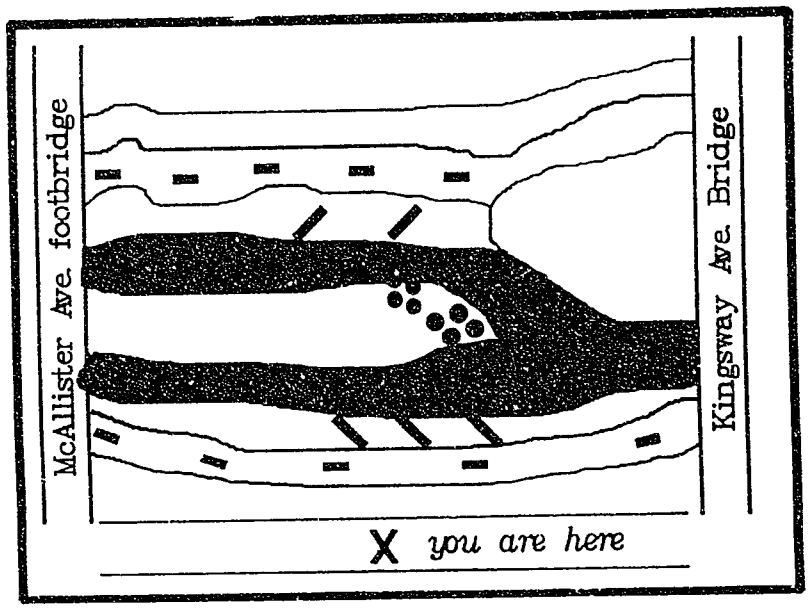
Donald Bernard

CITY OF PORT COQUITLAM B.C. RECEIVED OCT 30 1990

Environment Canada Environnement Canada

COQUITLAM RIVER
FLOOD CONTROL PROJECT

THE FOLLOWING FEATURES WERE USED TO REPLACE RIVER BANK VEGETATION AND FISH HABITAT :



'ECO-CELLS' ▬ PLANTED WITH LOCAL RIVERINE VEGETATION PROVIDE SOURCES OF FOOD, COVER AND SHADE FOR FISH.

ROCK GROYNES / AND BOULDER GROUPINGS ⁘ CREATE PROTECTIVE AND RESTING AREAS FOR FISH.

A FISH REARING CHANNEL DOWNSTREAM WILL PROVIDE ADDITIONAL HABITAT FOR JUVENILE SALMON.

CANADA – BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL PROGRAM

COQUITLAM RIVER
FLOOD CONTROL PROJECT

THIS PROJECT WAS BUILT UNDER THE JOINTLY FUNDED CANADA -- BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL PROGRAM TO PROVIDE NEEDED FLOOD PROTECTION TO THE CITY OF PORT COQUITLAM.

TO REPLACE RIVER BANK VEGETATION AND FISH HABITAT :

- THE BASE OF THE BANKS WERE REPLANTED WITH LOCAL VEGETATION
- ROCK GROYNES AND BOULDERS WERE POSITIONED IN THE RIVER CHANNEL
- A FISH REARING CHANNEL HAS BEEN DESIGNED DOWNSTREAM

CANADA – BRITISH COLUMBIA FRASER RIVER FLOOD CONTROL PROGRAM

THE CORPORATION OF THE
CITY OF PORT COQUITLAM

MEMORANDUM

TO: ENVIRONMENTAL PROTECTION COMMITTEE DATE: November 19, 1990

FROM: C.F. (Kip) Gaudry, P. Eng.
Deputy City Engineer

SUBJECT: **SOIL CONTAMINATION - RIVERWOOD LAGOON**

Attached are two pieces of information concerning the soil contamination and investigation of the Riverwood Sewage Lagoons. The first is Hamilton & Associates correspondence to us, dated October 18, 1990 concerning the soil contamination investigation of the Riverwood Lagoons. The second corresponcence is my letter back to them indicating insufficient data was presented.

After examining the information submitted, I am of the opinion that insufficient testing, examination, and analysis was completed in order for Hamilton & Associates, through their consultants, to provide us with an informed opinion on which to act. I trust that my response to them will prompt more sufficient action.

I do feel however, that we may also wish to immediately engage our own study for this area in that it could become a very contentious and problematical issue, particularly if special wastes are found, or if the effluent from storm water drains has the potential to contain high levels of contaminants.

C.F. (Kip) Gaudry, P. Eng.
Deputy City Engineer

CFG:gc

cc: I.R. Zahynacz, P. Eng.
City Engineer

THE CORPORATION OF THE CITY OF PORT COQUITLAM

2580 SHAUGHNESSY STREET
PORT COQUITLAM, B C.
V3C 2A8

TELEPHONE: 941-5411
FAX: 464-3524

OUR FILE 900-110

F'l.

November 19, 1990

HAMILTON & ASSOCIATES
8th Floor, 509 Richards Street
Vancouver, BC
V6B 2Z6

Attention: Mr. Art Phillips

Dear Sirs:

RE: Soil Contamination Investigation - Riverwood Lagoons

I have reviewed your letter of October 18, 1990 complete with the report by B.H. Levelton & Associates Ltd. on the sewage lagoon samples at Riverwood Development site. Unfortunately, the information submitted to us for consideration is incomplete and it would be inappropriate for us to make any descisions until you can provide us with further, more exact information.

It would appear that Levelton took four samples of the effluent from the lagoons and then tested them with standard laboratory techniques. However, the plans for the Riverwood area indicate that these sewage lagoons will be used for either an interim or permanent storm water drainage system. In this event, it may be appropriate to perform a S.W.E.P. test on the sludge to determine if the storm water effluent will be negatively effected and cause us a problem when introduced to the river.

We are also unclear as to the full signifigance of the high concentrations of copper in the sludge. According to the information provided in the Levelton report, the areas should be only used for commercial and industrial uses, however, initial planning concepts indicate otherwise.

Cont'd /2...

SOIL CONTAMINATION INVESTIGATION - RIVERWOOD LAGOONS Cont'd...

We would also like the sludge and storm water leachate examined against the special waste regulations of the Waste Management Act of B.C. Does the site or the materials constitute a special waste under the Act?

We would be pleased to provide further information should you so require.

Yours truly,

C.F. (Kip) Gaudry, P. Eng.
Deputy City Engineer

CFG:gc

cc: I.R. Zahynacz, P. Eng., City Engineer
Carlos Felip, Director of Planning
Alderman Mike Wright, Chairman Environmental Protection Committee

HAMILTON ASSOCIATES
Engineering • Transportation • Development • Planning Consultants

October 18, 1990

Our File: 6439

City of Port Coquitlam
2580 Shaughnessy Street
Port Coquitlam, B.C.
V3C 2A8

Attention: Mr. Carlos Felip,
Director of Planning

Dear Sir:

RE: SOIL CONTAMINANT INVESTIGATION, RIVERWOOD LAGOONS

Further to our meeting and letter of September 12, 1990, we are pleased to submit the test results of the sediment from the former sewage lagoons. The sampling of the sludge and testing for possible contaminants was undertaken by B.H. LEVELTON & ASSOCIATES LTD.

On September 27, 1990 Ms. Alena Straka of our office and two representatives from LEVELTON conducted the field investigation and sampling process. A total of four samples, two from each lagoon, were collected and analyzed for heavy metals. As indicated in our letter of September 12, 1990, the particular trace metals that are of significant environmental concern are mercury, lead and zinc. You'll note from the test results that for all three metals the results indicate that the levels are within the range for residential and recreational use.

The one trace metal which exceeds level "B" is copper, which can be attributed to copper piping used in households at the time when the lagoons were in use. The concentration levels of this metal range from a low of 160 mg/kg and a high of 550 mg/kg which are suitable for commercial and industrial uses but may be considered high for residential and recreational use. Further testing and appropriate mitigative measures would need to be explored prior to the use of the lagoons for recreational use.

8th Floor, 509 Richards Street, Vancouver, B.C. Canada V6B 2Z6 Telephone (604) 684-4488 Fax 684-5908

We trust that the enclosed information addresses the concerns raised by the Mayor and Alderman Laking and that development of Riverwood can now proceed in an orderly fashion.

Yours sincerely,

G.D. HAMILTON & ASSOCIATES CONSULTING LTD.

per: Art Phillips
Vice President - Planning

cc: FREEMONT HOLDINGS LTD.

B.H.
EVELTON & ASSOCIATES LTD.

3805 OSLER STREET
VANCOUVER, B.C. CANADA V6P 4G1
(604) 266-1411 FAX: (604) 266-0130

October 15, 1990
File: 490-822

Hamilton Associates
8th Floor, 509 Richards Street
Vancouver, B.C.
V6B 2Z6

Attention: Ms. Alena Straka

Dear Alena:

RE: Sewage Lagoon Samples at Riverwood Development Site

As per your request, four sludge samples were obtained from the lagoons and were analysed for heavy metals. Approximate sample locations are shown in Figure 1. All four samples were analysed for heavy metals and the results are given in Table 1.

B.C. Ministry of Environment (MOE) has developed standards of levels of contamination acceptable for proposed land uses. These standards are known as Levels A, B and C.

These levels are listed in Table 1.

Level A: is the approximate achievable analytical detection limit or background levels for compounds in soils - soils in this category are considered clean.

Level B: is the level for which residential and recreational use is acceptable.

Level C: is the level for which commercial and industrial use is acceptable.

October 15, 1990
File: 490-822

The results indicate that the metal concentrations in all the samples to be between Levels A & B except for copper. The copper concentration in Sample #1 is above Level C and in rest of the samples, copper concentration is above Level B. This is due to the copper piping used in the households. However, they do not meet the Level B criteria for residential/recreational development.

If you have any questions or require any clarification, please contact the undersigned.

Yours very truly,

B.H. LEVELTON & ASSOCIATES LTD.

N. Shah

Neil Shah

NS:gs
Encl.

TABLE 1: ELEMENT CONCENTRATIONS IN FOUR SLUDGE SAMPLES

Element	Sample No.				B.C. Standards for Site Decommissions for Soils (mg/kg)		
	1 (mg/kg)	2 (mg/kg)	3 (mg/kg)	4 (mg/kg)	A	B	C
Chromium	40	15	25	20	20	250	800
Nickel	20	10	15	15	20	100	500
Zinc	520	340	410	200	80	500	1500
Silver	1.5	2	2.5	1	2	20	40
Cadmium	4	1.5	2	1	1	5	20
Tin	4.5	3	5	2	5	50	300
Mercury	2	0.6	1	0.5	.1	2	10
Lead	200	65	80	40	50	500	1000
Cobalt	4	2.5	4.5	5.5	15	50	300
Copper	550	260	320	160	30	100	500
Arsenic	10	4	6.5	5	5	30	50
Selenium	5.5	2	0.1	1.5	2	3	10
Molybdenum	4	1.5	1.5	1.5	4	10	40
Barium	280	170	220	320	200	500	2000

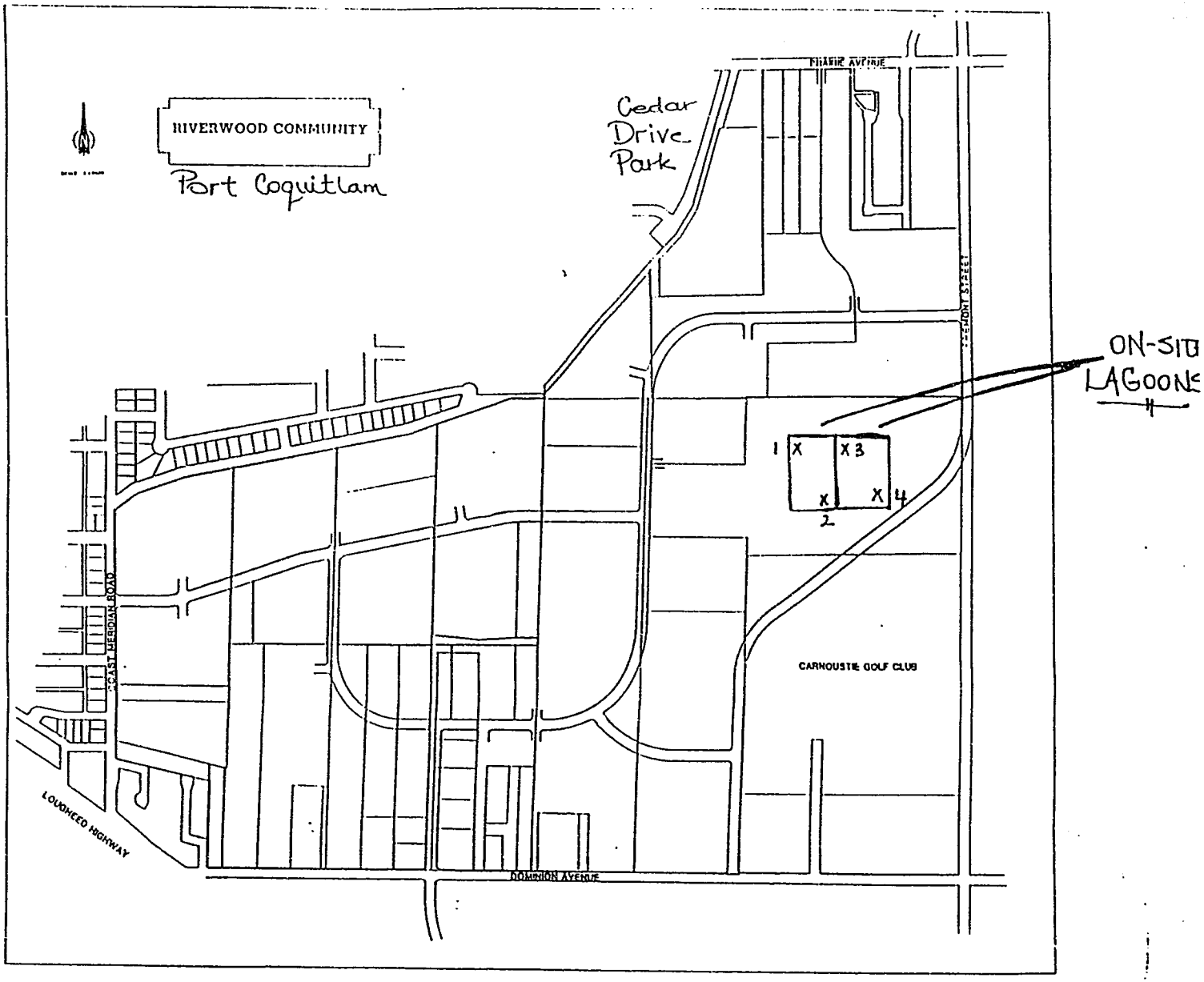


FIGURE 1: APPROXIMATE SAMPLING LOCATIONS

THE CORPORATION OF THE
CITY OF PORT COQUITLAM

MEMORANDUM

TO: B.R. Kirk
City Administrator

DATE: January 16, 1991

FROM: C.F. (Kip) Gaudry, P. Eng.
Deputy City Engineer

SUBJECT: **ENVIRONMENTAL ASSESSMENT PROCEDURES & GUIDELINES FOR COSTS OF GRADE SEPARATIONS FOR RAILWAYS IN CANADA**
(Environmental Protection Committee, January 15, 1991)

Recommendations:

For Information

Background & Comments:

The Environmental Protection Committee considered information forwarded to the City regarding changes noted in correspondence dated November 29, 1990 from the National Transportation Agency of Canada.

The Agency notified us of two important changes. Firstly, all applications regarding work on railway's property must contain a full environmental assessment prior to consideration on their part. In the case of the City of Port Coquitlam, this would include applications for crossings of roads, water mains, sewer mains, storm sewers, and sidewalks. In 1991 we would anticipate having to complete environmental assessments for our watermain casing and road reconstruction over CPR tracks on Westwood.

Although the requirement for environmental assessments has been in existence since 1984, it has only been recently mandated as a result of court decisions on the Old Man River and Rafferty Alameda Dam cases where the Federal Government was challenged on incomplete environmental assessments.

Secondly, the agency redrafted the guidelines on apportionment of costs of grade separations and adopted them on October 23, 1990. For basic grade separation the following cost breakdown would normally be applied:

1. On projects due primarily to highway development

   - 85% highway authority
   - 15% railway company

2. On projects were both highway and railway development have contributed largely to the need for the project

   - 50% highway authority
   - 50% railway company

Cont'd /2...

REPORT TO COUNCIL Cont'd...

3. On projects due primarily to railway development

   - 15% highway authority

   - 85% railway company

As Council may recall, in the past, grade separations were dealt with under the National Transportation Act and Railway Act, General Order No. E5 and provided for a majority of the funds for railway/highway crossings through the RAILWAY GRADE CROSSING FUND. The main difference in the new guidelines for cost appropriation is the elimination of the FUND and the responsibility shared only between the railroad company and the highway authority.

Copies of the following documents are available in the Engineering Office if Council requires further information:

1. The National Transportation Agencies Notice and Draft Environmental Assessment Procedures.

2. The National Transportation Agencies Guideline on Apportionment of Costs of Grade Separations which were adopted by the Agency on October 23, 1990.

3. National Transportation Act - Railway Act - General Order No. E5 (now repealed).

C.F. (Kip) Gaudry, P. Eng.
Deputy City Engineer

CFG:gc

THE CORPORATION OF THE
CITY OF PORT COQUITLAM

MEMORANDUM

TO: Environmental Protection Committee DATE: November 29, 1990

FROM: C.F. (Kip) Gaudry, P. Eng.
Deputy City Engineer

SUBJECT: **NOTICE & DRAFT ENVIRONMENTAL ASSESSMENT PROCEDURES GUIDELINES FOR APPORTIONMENT OF COSTS OF GRADE SEPARATIONS FOR RAILWAYS IN CANADA**

Recommendation:

That the report be received for information.

Background & Comments:

The National Transportation Agency of Canada recently notified us of two items. Firstly, all applications regarding work on railway's property must contain a full environmental assessment prior to consideration on their part. In the case of the City of Port Coquitlam this would include applications for crossings of roads, water mains, sewer mains, storm sewers, and sidewalks. Although the requirement has been in existence since 1984, it has only recently been mandated as a result of the court decisions on the Old Man River and Rafferty Alameda Dam cases.

The Agency has also redrafted the guidelines on a apportionment of costs of grade separations and adopted them on October 23, 1990. For basic grade separations the following costs breakdown would normally be apportioned:

1. On projects due primarily to highway development

   - 85% Highway Authority
   - 15% Railway Company

2. On projects where both highway and railway development have contributed largely to the need for the project

   - 50% Highway Authority
   - 50% Railway Company

3. On projects due primarily to railway development

   - 15% Highway Authority
   - 85% Railway Company

Cont'd /2...

Memo to Environmental Protection Committee Cont'd...

For your information, I have attached the old General Order E5 regarding previous arrangements for cost sharing. The main change is the elimination of the Railway Grade Crossing Fund which funded a majority of the many projects in the past.

In Port Coquitlam's case these would be the guidelines under which a grade separation on the Wilson Connector would be applied for under.

C.F. (Kip) Gaudry, P. Eng.
Deputy City Engineer

CFG:gc

Attachment

THE CORPORATION OF THE
CITY OF PORT COQUITLAM

M E M O R A N D U M

TO: Kip Gaudry
Deputy City Engineer

DATE: November 14, 1990

FROM: Danielle Pagé
Administration

RE: Notice and Draft Environmental Assessment Procedures - National Transportation Agency of Canada

---

His Worship Mayor Traboulay has asked that this document be referred to the Environmental Protection Committee for its consideration.

D. Pagé

c.c.: Environmental Protection Committee

Att.

Office national des transports du Canada

National Transportation Agency of Canada

Veuillez trouver ci-inclus pour votre information les deux articles suivants:

1. **L'avis et brouillon des procédures d'évaluation environnementale** de l'Office national des transports; et

2. **Les lignes directrices pour la répartition des frais des sauts-de-mouton** de l'Office national des transports, lesquelles ont été adoptées par l'Office le 23 octobre 1990.

Si vous avez des questions concernant le dernier article, veuillez contacter:

Ian C.W. Spear
Directeur intérimaire
Direction de l'infrastructure ferroviaire
Direction générale du règlement des différends
OTTAWA (Ontario) K1A 0N9
(819) 953-0327

Please find enclosed for your information the following two items:

1. The National Transportation Agency's **Notice and Draft Environmental Assessment Procedures**; and

2. The National Transportation Agency's **Guidelines on Apportionment of Costs of Grade Separations** which were adopted by the Agency on October 23, 1990.

If you have any questions concerning the latter item please contact:

Ian C.W. Spear
A/Director
Rail Infrastructure Directorate
Dispute Resolution Branch
OTTAWA, Ontario K1A 0N9
(819) 953-0327

Suzanne L. Clément
Secrétaire
Office national des transports du Canada
OTTAWA (Ontario)
K1A 0N9
Tél: (819) 997-0677
Télex: 053-3615
Fax: (819) 953-5253

Secretary
National Transportation Agency of Canada
OTTAWA, Ontario
K1A 0N9
Tel: (819) 997-0677
Telex: 053-3615
Fax: (819) 953-5253

Canada

Office national des transports du Canada

National Transportation Agency of Canada

AVIS

NOTICE

RELATIF aux procédures d'évaluation environnementale de l'Office national des transports.

À compter du 1er décembre 1990, l'Office national des transports (ci-après l'Office) exigera qu'une déclaration sur les incidences environnementales soit jointe à toute demande de construction ou de modification de voies ferrées. Une déclaration des incidences environnementales devra donc être jointe à toute demande présentée à compter de cette date.

Cette exigence tient à l'application du Décret sur les lignes directrices visant le processus d'évaluation et d'examen en matière d'environnement adopté par le gouverneur en conseil en 1984, décret auquel sont assujettis tous les ministères et organismes fédéraux, aux termes des décisions judiciaires rendues récemment au sujet des barrages Oldman River et Rafferty Alameda.

De même, l'Office aimerait recevoir un bref énoncé des incidences environnementales des projets habituellement présentés par les administrations routières municipales concernant les voies ferrées, dont la construction ou la modification de voies. Les procédures provisoires de l'Office, que vous trouverez ci-joint, donnent un aperçu des questions à couvrir. Les résultats de ces évaluations devraient normalement faire l'objet d'un texte de moins de cinq pages, d'une ou deux pages probablement.

IN THE MATTER OF the environmental assessment procedures of the National Transportation Agency.

As of December 1, 1990, the National Transportation Agency (hereinafter the Agency) will be requiring that all applications for new railway line construction or changes to existing railway lines be accompanied by a statement setting out the environmental impact of the proposal. Applications made after this date are expected to include such a statement.

This requirement is made as a result of the application of the Environmental Assessment and Review Process Guidelines Order passed by the Governor in Council in 1984, and made mandatory on all federal government departments and agencies by the recent court decisions on the Oldman River and Rafferty Alameda Dam cases.

For projects involving railway lines which are typically submitted by municipal road authorities, such as new or reconstructed grade crossings, the Agency wishes to receive a brief statement of the environmental impacts. The attached draft Agency procedures provide a perspective on the matters to be dealt with. These assessments should normally be done in less than five pages, and likely in a page or two.

Canada

DRAFT

NATIONAL TRANSPORTATION AGENCY
ENVIRONMENTAL ASSESSMENT PROCEDURES

OVERVIEW

The Environmental Assessment and Review Process Guidelines Order (hereinafter EARP Guidelines Order) requires that applications submitted to the National Transportation Agency (hereinafter the Agency) be assessed with regard to their effects on the environment.

In order for an application to be considered by the Agency, the said application must be accompanied by a document which assesses the environmental effects of the activity and describes the measures taken or to be taken by the applicant to minimize any adverse effects. The Agency will review the environmental assessment prepared by the applicant and make a determination with regard to the significance of the predicted environmental effects. The Agency will then authorize one of the following courses of action as prescribed in the EARP Guidelines Order:

1) Appears on the Agency Exclusion List; proposal may proceed.

2) No potentially adverse environmental effects; proposal may proceed.

3) Adverse environmental effects are mitigable; proposal may proceed with mitigation as will be described.

4) Unknown adverse environmental effects; proposal referred for further assessment.

5) Unknown ability to mitigate adverse environmental impacts; proposal referred for further assessment.

6) Significant adverse environmental effects; proposal referred for public review by a panel.

7) Sufficient public concern has been received to require that the proposal be referred for public review by a panel.

8) Type of proposal on list for automatic referral to a panel.

9) Unacceptable adverse environmental effects; the proposal must be modified and reassessed, or abandoned.

CONTENT OF THE ENVIRONMENTAL ASSESSMENT DOCUMENT

The assessment must include information on each of the following topics:

- rationale for the activity
- description of the proposed activity
- description of the existing environment
- assessment of the effects of the activity on the environment
- alternatives considered and the reasons for their rejection.

Informational Requirements:

The description must be sufficiently detailed to enable the Agency to ascertain the condition of the environment. The description must touch upon the following facets of the environment: physical, biological, and human (Appendix 2).

Additional information could include maps, figures, plans, photographs and a list of references and individuals/organizations contacted.

Level of Effort:

The level of effort required varies considerably depending on the diversity of the environment. However, a narrative of not more than 1-3 pages should suffice in most cases.

4) Assessment of Environmental Effects

Purpose:

To describe and evaluate the changes to the environment that will result from the activity. To describe the special measures, referred to as mitigation measures, that will be implemented to eliminate or minimize adverse environmental effects.

Informational Requirements:

Any change to existing environmental conditions is considered to be an "effect". The applicant is required to describe each effect in terms of its nature (i.e. what is the effect), magnitude (i.e. how big/extensive is it), severity (i.e. how drastic the change will be), and duration (i.e. will the change be temporary or permanent). Appendix 3 provides some examples of the types of effects that may result from the activities involved with the project. Each effect should be presented in relation to the facet of the proposed activity which gives rise to the effect and to the mitigation proposed to minimize the effect. An evaluation of the significance of each effect should conclude this section. Significance is determined on the basis of the importance of the affected resource and the extent of the effect.

Level of Effort:

For activities with a number of "minor" effects a summary table may suffice. Longer descriptions are required for more significant effects.

5) Alternatives Considered

Purpose:

To describe any project alternatives (e.g. different location, design, etc.) that would have had fewer adverse environmental effects, and to explain why they were rejected.

Informational Requirements:

Narrative description of each alternative and an explanation of the principal reasons for its rejection.

Level of Effort:

1-2 pages

Appendix "2"

ASSESSMENT CRITERIA
ECOSYSTEM COMPONENTS

Physical

- Land
- Adjacent land use
- Groundwater
- Surface water
- Drainage
- Air quality
- Noise
- Vibration

Biological

- Plants
- Animals

Human

- Transportation services
- Recreational
- Archaeological

Landscaping

- Time delay between land clearance and revegetation.
- Planting species which affect transpiration demand.
- Planting species attractive to herbivores in right-of-way.

Cutting Trees

- Soil leaching.
- Changes to ground water supply (creation of wetland or loss of water storage capacity).
- Poorly planned tree cutting can create negative visual effects.

Discharging Effluent

- Effluent discharged containing insoluble material.
- Effluent containing toxic material or harmful organisms.
- Effluent containing foaming agent. suspended solids or plant nutrients.

Drainage Alteration

- Erosion.
- Equipment noise.
- Alteration in ground water regime (physical and chemical).
- Draining a marsh or wetland.
- Lowered water table.
- Drainage pattern disruption through fill techniques.

Drilling and Blasting

- Alteration of groundwater flow.
- Noise.
- Blast shock.
- Blasting near trees.

Excavating

- Type of soil or degree of slope and the effects of erosion.
- Interference with groundwater.
- Archaeological site.
- Habitat loss.
- Excavation in permafrost.

Exploiting resources

- Depletion of resource.
- Noise.

GUIDELINES ON APPORTIONMENT OF COSTS OF GRADE SEPARATIONS

PREAMBLE

The National Transportation Agency of Canada (the Agency), after extensive study and consultation with Canadian railways, representatives of highway authorities across Canada and other interested parties, has prepared the following guidelines. These guidelines are to form the basis of cost apportionment decisions concerning the construction and reconstruction of structures designed to allow railway and highway traffic to cross each other at different elevations.

In preparing these guidelines, the Agency has considered, among other things, the benefits accruing to each party for the construction and reconstruction of grade separations as well as the responsibility that each party, as an essential part of Canada's transportation system, has to co-exist at crossings.

The Agency has the authority under the Railway Act to grant leave for the construction and reconstruction of grade separations on terms and conditions relating to the public convenience and to apportion the costs of such works. The Agency expects the parties involved with a grade separation project to attempt to come to an agreement on all the issues relative to the project including apportionment of costs. The Agency is prepared to issue Orders on the basis of any agreement reached between the parties.

Should the parties be unable to reach agreement, the Agency will rule on any outstanding issues based on submissions to the Agency from the parties concerned. Such submissions may address any of the items outlined in the Guidelines as well as any other matter that the parties consider relevant.

Every case will be assessed on its own merits to determine whether the Guidelines apply and it should be emphasized that the Agency retains complete discretion for the apportionment of costs for grade separations. The Agency will issue decisions which vary from the Guidelines if appropriate in the circumstances surrounding a particular grade separation project.

.../2

DEFINITIONS

a) A crossing allows highway and railway traffic to cross each other.

b) An established crossing is normally one which has been in existence for public use for at least three years.

c) A grade separation is a structure, including the approaches thereto, which allows highway and railway traffic to cross each other at different elevations.

d) A basic grade separation is that portion of the work which is required to provide adequate facilities for present day needs at the time of construction or reconstruction of the grade separation.

e) An overhead bridge is a grade separation which carries a highway across and over a railway.

f) A subway is a grade separation which carries a railway across and over a highway.

g) A highway authority is any public authority having jurisdiction to construct and maintain a highway.

h) A railway company means a railway company subject to the jurisdiction of the Agency.

GUIDELINES

1. The costs of construction and maintenance of a basic grade separation on a new route are normally paid in full by the party deciding to construct the new route.

2. Where an existing grade separation is to be reconstructed for the purposes of the party having exclusive responsibility for that grade separation, the costs of reconstruction and maintenance of the basic grade separation are normally paid in full by that party.

.../3

3. For a basic grade separation that:

a) is required to eliminate an established crossing at grade or to divert substantially all highway traffic therefrom; or

b) reconstructs an existing grade separation where both parties have responsibility or where the reconstruction is for the purposes of the party having no responsibility;

the costs of construction are normally to be apportioned as follows:

i) on projects due primarily to highway development

85% Highway Authority
15% Railway Company;

ii) on projects where both highway and railway development have contributed largely to the need for the project

50% Highway Authority
50% Railway Company;

iii) on projects due primarily to railway development

15% Highway Authority
85% Railway Company:

the costs of maintenance are normally to be apportioned as follows:

i) all costs of maintenance of the substructure, superstructure and retaining walls of an overhead bridge are to be paid by the highway authority;

ii) all other costs of maintenance of an overhead bridge, including the cost of maintaining the railway approaches, track structure, railway drainage and communication facilities are to be paid by the railway company;

iii) all costs of maintenance of the substructure and the superstructure of a subway are to be paid by the railway company; and

iv) all other costs of maintenance of a subway, including the cost of maintaining the highway approaches, retaining walls, highway surface, sidewalks, drainage and lighting are to be paid by the highway authority.

.../4

4. The costs of a basic grade separation are not to include the cost that would otherwise be incurred by the railway company or the highway authority if the crossing did not exist.

5. The costs of construction and maintenance of additional facilities in excess of the costs of the basic grade separation are normally to be paid by the party requesting the additional facilities.

6. Clearances and pier protection in excess of the following are normally considered to be additional facilities:

   a) Overhead Bridges

      i) Vertical clearance of 7.16 m above the base of rail for new or reconstructed basic grade separations;

      ii) Lateral clearance of 5.5 m from the centreline of the nearest track to the nearest pier or abutment in the basic grade separation;

      iii) Pier protection, where determined to be necessary, as per the American Railroad Engineering Association Specifications;

   b) Subways

      Vertical and lateral clearances as per the design standards for grade separations of the province in which the grade separation is located.

Office national des transports du Canada
National Transportation Agency of Canada

DIRECTION GÉNÉRALE DU RÈGLEMENT DES DIFFÉRENDS
DISPUTE RESOLUTION BRANCH

PITNEY BOWES
8210

Nº DE FAX - FAX NO.
(819) 953-5686

TRANSMETTRE A - TRANSMIT TO

Nom - Name: KIP GAUDRY

Ministère - Department: DEPUTY CITY ENGINEER

Endroit - Location: CITY OF PORT COQUITLAM

Nº de téléphone - Telephone No.: 604-941-5411

Nº de FAX - FAX No.: 604-464-3524

Nombre de pages à transmettre - Number of Pages Attached for Transmittal: 3

EXPÉDITEUR - ORIGINATOR

IAN SPEAR

Direction de l'infrastructure ferroviaire
Office national des transports du Canada
17e étage
15 rue Eddy
Hull (Québec)
Adresse Postale Ottawa (Ontario) K1A 0N9

Rail Infrastructure Directorate
National Transportation Agency of Canada
17th Floor
15 Eddy Street
Hull, Quebec
Postal Address Ottawa, Ontario K1A 0N9

Nº de téléphone 819-953-0327 Telephone No.
Nº de facsimilé (819) 953-5686 Facsimile No.

NOTA - NOTES

KIP
- the Guidelines are to be used in place of sections 10.-13 on the attached document.

Yours Ian Spear

NATIONAL TRANSPORTATION ACT
RAILWAY ACT
Railway Grade Separations Regulations

CANADIAN TRANSPORT COMMISSION

GENERAL ORDER NO. R-5

REGULATIONS RESPECTING THE CONSTRUCTION, RECONSTRUCTION AND IMPROVEMENT OF GRADE SEPARATIONS IN RESPECT OF RAILWAYS SUBJECT TO THE JURISDICTION OF THE COMMISSION

Short Title

1. These Regulations may be cited as the Railway Grade Separations Regulations.

Interpretation

2. In these Regulations,

"fund" means the Railway Grade Crossing Fund;(caisse)
"grade separation" means a subway or an overhead bridge;(étagement de voies)
"overhead bridge" is a structure, including the approaches thereto, that carries a highway across and over the railway;(passage supérieur)
"person" includes a railway company under the jurisdiction of this Commission and any public authority having jurisdiction to construct and maintain a highway; (personne)
"railway company" means a railway company subject to the jurisdiction of the Commission; (compagnie de chemin de fer)
"subway" is a structure, including the approaches thereto, that carries a highway across and under the railway. (passage inférieur)

Grade Separation

3. Any person proposing to construct, reconstruct or improve a grade separation shall file an application with the Secretary of the Commission and include with the application three copies of a general plan duly signed, numbered and dated, and if the application includes a request for a grant from the Fund, the applicant shall also include with the application reasonable detail of the estimated cost of the proposed work as well as the names and addresses of the head offices of any utility companies or commissions whose facilities will be affected.

4. No person shall begin the construction, reconstruction or improvement of a grade separation until

(a) the Commission has, by order, granted such person leave to perform the work;

(b) a general plan prepared and approved as provided in section 3 has been submitted to the Commission; and

(c) plans showing the detail of design of the proposed project have been approved by an engineer of the Commission.

5. The applicant shall show on a general plan prepared on a scale of 1 inch equals 100 feet

(a) the location of the structure and approaches on each side;

(b) the limits of the project within which the applicant considers a grant from the Fund may be applicable;

(c) the location and number of railway tracks and the boundaries of the right-of-way of the railway company for a distance of at least 300 feet on each side of the crossing;

(d) any necessary track changes on account of the proposed grade separation;

(e) the boundaries of the existing road allowance and proposed road allowance, and the boundaries of additional land to be occupied by the proposed structure and approaches, including any additional land required for drainage or to be occupied by utilities, as well as the location and width of proposed road surfaces and sidewalks within the said boundaries;

(f) a plan of the substructure indicating the side clearances;

(g) a cross section of the proposed structure showing the location of curbs, sidewalks, trackage, lighting and width of road;

(h) a profile of the centre of proposed road within the limits of the project prepared at a scale of 1 inch equals 100 feet horizontally and 1 inch equals 10 feet vertically;

(i) an elevation of the proposed structure prepared at a scale of 1 inch equals 10 feet vertically; and

(j) a key map at a scale of 1 inch equals 400 feet, wherever possible, showing the location of the proposed work and all crossings affected thereby.

6. When an application is made by persons other than railway companies, copies of such application and plans shall be forwarded to the head office of the railway company concerned, or if such head office is not in Canada, to the office of its Canadian agent, and the applicant shall advise the Commission that this has been done.

7. The applicant shall forward a copy of the application and general plan to the head office of each utility company or commission whose facilities will be affected, advising the Commission that they have done so.

8. Within 30 days from the date of receipt of the application and of the plan, the railway company and the utility companies and commissions concerned shall make their submissions to the Commission with respect to the said application; the submissions of the utility companies and commissions shall include a sketch or plan showing the present location of their facilities and showing the changes which they consider may be necessary to permit the construction or reconstruction within the limits of the project in accordance with paragraph 5(a) and shall include an estimate in reasonable detail of the cost of the changes to their facilities.

9. Upon receipt of all necessary submissions, the Director of Engineering of the Commission will arrange for an inspection with representatives of the railway company, the highway authority and utility companies and commissions to discuss the project in detail at the site, including discussion of design and estimated cost.

10. Where a grant from The Railway Grade Crossing Fund may be made, and unless otherwise ordered by the Commission in its discretion, the cost of construction of a new grade separation to be built within the limits of an existing road allowance which will eliminate an existing crossing at grade, where the cost does not exceed $625,000, shall be apportioned pursuant to the following formula adopted by the Commission:

(a) 80 per cent payable from The Railway Grade Crossing Fund;
(b) 15 per cent payable by the highway authority; and
(c) 5 per cent payable by the railway company.

11. When the cost of construction of a grade separation is apportioned in accordance with the formula of section 10, the cost of future maintenance of the said grade separation, unless otherwise ordered by the Commission, shall be borne as follows:

(a) all costs of maintenance of an overhead bridge shall be borne by the highway authority;

(b) all costs of maintenance of the substructure and superstructure of a subway shall be borne by the railway company; and

(c) all other costs of maintenance of a subway, including the cost of maintaining the approaches, road surface, sidewalks, drainage and lighting shall be borne by the highway authority.

12. Unless otherwise ordered by the Commission, the cost of the reconstruction and improvement of a grade separation

(a) that was in existence on June 28, 1955, and

(b) in respect of which the railway company, prior to such reconstruction and improvement, contributed towards the cost of construction and the cost of maintenance or either of them

shall be apportioned pursuant to the following formula adopted by the Commission:

(c) 30 per cent or $250,000, whichever is the lesser, payable from the Railway Grade Crossing Fund;

(d) 12 1/2 per cent or $62,500, whichever is the lesser, payable by the railway company; and

(e) the balance payable by the highway authority.

13. When the cost of reconstruction and improvement of a grade separation is apportioned in accordance with the formula in section 12, the cost of future maintenance of the said grade separation, unless otherwise ordered by the Commission shall be borne as follows:

(a) all cost of maintenance of an overhead bridge shall be borne by the highway authority;

(b) all costs of maintenance of the substructure and superstructure of a subway shall be borne by the railway company; and

(c) all other costs of maintenance of a subway, including the cost of maintaining the approaches, road surface, sidewalks, drainage and lighting, shall be borne by the highway authority.

14. With respect to structures supporting railway tracks and facilities, the railway company shall, unless otherwise authorized by the Commission,

(a) design the entire structure and prepare all plans necessary for the construction thereof, and supervise the construction;

(b) design, install and maintain all falsework required for the temporary support of its tracks or other facilities during the construction of the work, and perform all work in connection with such changes to any of its facilities as may be necessary to permit the execution of the project and to protect its traffic;

(c) invite tenders and award the contracts for the construction of the structure, subject to the approval of the province or municipality, as the case may be;

(d) approve all shop drawings for fabricated structural steel or iron before their submission to the Commission, and perform the necessary mill, shop, and field inspection in connection therewith; and

(e) carry out all such work in accordance with the railway's specifications.

15. With respect to structures carrying highways over railway's tracks and facilities,

(a) the highway authority shall design such structures, but all plans and specifications shall be submitted to the railway company concerned for its approval, except that, by agreement between the parties concerned, the railway company may design such structure, but all plans and specifications shall be submitted to the highway authority concerned for its approval;

(b) the construction of such structure within the limits of the railway's property shall be carried out to the satisfaction of the railway company;

(c) all work in connection with changes to any of the railway's facilities, as may be necessary to permit the execution of the project and to protect its traffic shall be performed by the railway;

(d) where the railway company has consented that the work be performed on its property by a person other than the company, such work may be performed only after such person has received the approval of, and if the work is performed under the supervision of, the company; and

(e) any part of a structure to be maintained by the railway shall be constructed in accordance with the railway's specification.

THE CORPORATION OF THE
CITY OF PORT COQUITLAM

MEMORANDUM

TO: B.R. Kirk
City Administrator

DATE: January 16, 1991

FROM: C.F. (Kip) Gaudry
Deputy City Engineer

SUBJECT: **VANCOUVER AIRPORT - PARALLEL RUNWAY PROJECT**
(Environmental Protection Committee, January 15, 1991)

Recommendation:

For Information.

Background & Comments:

The Environmental Protection Committee considered correspondence from Transport Canada, dated September 20, 1990 and December 20, 1990, outlining the current status of the environmental impact study for the proposed parallel runway project at the Vancouver International Airport. The environmental impact assessment is continuing and a Federal Environmental Assessment Review Panel will hold public hearings commencing January 28, 1991 into the full impact on communities of the proposed expansion to the Vancouver Airport. The Environmental Protection Committee will continue to deal with all information received on this project.

If Council have concerns, we can either write directly to the Federal Environmental Assessment Review Panel or make a presentation at one of the public hearings.

The technical information, pamphlets, and brochures on this project can be viewed in the Alderman's Lounge.

C.F. (Kip) Gaudry, P. Eng.
Deputy City Engineer

CFG:gc

Transport Canada
Airports

Vancouver
International Airport
P.O. Box 23750
Airport Postal Outlet
Richmond, B.C.
V7B 1Y7

Transports Canada
Aéroports

Aéroport
international de Vancouver
Boîte postale 23750
Bureau de poste de l'aéroport
Richmond (C.-B.)
V7B 1Y7

Your file *Votre référence*

Our file *Notre référence*

1590-2133

20 September 1990

His Worship Mayor Len M. Traboulay
The Corporation of the City of Port Coquitlam
2580 Shaughnessy Street
Port Coquitlam, BC V3C 2A8

Dear Mayor Traboulay:

I am pleased to forward to you the Summary Report of the Environmental Impact Statement (EIS) for the Parallel Runway Project at Vancouver International Airport. At this juncture, the Environmental Assessment Panel is undertaking a comprehensive technical and public review of the EIS.

We expect that Public Hearings on the Project will commence in November.

If you have any questions concerning the Project, please contact the Project Manager, Michael Matthews at 276-7733.

Yours truly,

Frank O'Neill
Airport General Manager
Vancouver International Airport

Encl.

Canada

THE CORPORATION OF THE
CITY OF PORT COQUITLAM

M E M O R A N D U M

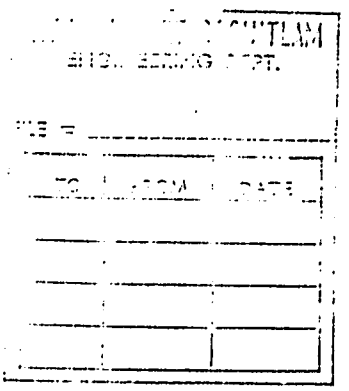
TO: Environmental Protection Committee DATE: January 2, 1991

COPY: Kip Gaudry, P.Eng.
Deputy Engineer

FROM: Danielle Pagé
Administration

RE: Vancouver International Airport - Parallel Runway

His Worship Mayor Traboulay has asked that this document be referred to the Environmental Protection Committee for information.



Danielle

Att.

Transport Canada
Airports

Vancouver
International Airport
P.O. Box 23750
Airport Postal Outlet
Richmond, B.C.
V7B 1Y7

Transports Canada
Aéroports

Aéroport
International de Vancouver
Boîte postale 23750
Bureau de poste de l'aéroport
Richmond (C.-B.)
V7B 1Y7

Your file *Votre référence*

Our file *Notre référence*
1590-2133

20 December 1990

His Worship Mayor Len M. Traboulay
The Corporation of the City of Port Coquitlam
2580 Shaughnessy Street
Port Coquitlam, BC V3C 2A8

Dear Mayor Traboulay:

Early in the New Year, the future of Vancouver International Airport will come under close public scrutiny as a Federal Environmental Assessment Review Panel holds public hearings on a proposed parallel runway.

Transport Canada has complied with the Panel's request for further information within the time frames necessary to begin public hearings January 28, 1991. This response, a supplement to the comprehensive Environmental Impact Statement of August 1990, is available through the Federal Environmental Assessment and Review Office (FEARO), at community, college and university libraries, and my office.

I have attached the latest FEARO newsletter on the parallel runway project, which sets out the basic framework for the public hearings and submissions to the Panel. I urge you to take an active role during these hearings and make your concerns known to the Panel.

We are committed to ensuring that enhancements to Vancouver International Airport's capacity are not only technically correct, but environmentally sound and community sensitive. Your participation in the public hearings will help us meet those goals.

As you can see, from the attached information on a public opinion survey undertaken by the Air Transport Association of Canada in September of this year, there is wide spread general support in the community for the runway project and the economic and social benefits it will bring.

If you have any questions about Vancouver International Airport, the proposed parallel runway project or the environmental review of the runway, please do not hesitate to contact my office.

My best wishes to you and your loved ones during this holiday season. May the year 1991 prove to be a successful one in all of our endeavours.

Yours truly,

Frank O'Neill
Airport General Manager
Vancouver International Airport

Att.

Canada

Federal Environmental Assessment Review Office
Bureau fédéral d'examen des évaluations environnementales

VANCOUVER INTERNATIONAL AIRPORT

Environmental Assessment Review Panel

November 21, 1990

Vancouver International Airport
Environmental Assessment Panel

NOTICE TO KEY REVIEW PARTICIPANTS

Planning for Public Hearings and Preparation of Technical Submissions

Public Hearings

Transport Canada has indicated that its response to the Panel's "Request for Additional Information and Consultation" will likely be submitted to the Panel on or about December 17th, 1990. As soon as this response is received and examined by the Panel, a notice of public hearings will be issued. As required by the Panel's "Procedures for Public Hearings", a minimum of 30 days notice will be given prior to the start of the hearings. If Transport Canada has its response submitted by December 17th, as expected, the Panel plans to start its hearings during the week of January 28, 1991. Formal notice of hearings will not be issued until the Transport Canada response has been received and the hearing dates can be confirmed. **However, all groups, agencies and individuals planning to participate in the hearings should make note of the tentative starting time of late January, 1991.**

It would be of assistance if those people planning to make a presentation at the hearings would notify the Panel Secretariat as soon as possible. This will facilitate the planning for the hearings and the development of an appropriate hearings agenda.

Preparation of Technical Submissions

In accordance with the "Procedures for Public Hearings", all written submissions of a scientific or technical nature must be received at least 14 days prior to the start of the hearings. Given that the hearings could start as early as January 28, 1991, **those wanting to make technical submissions should plan on having them ready for submission to the Panel Secretariat by NO LATER THAN JANUARY 14, 1991.** Technical submissions received after the deadline date may not be accepted by the Panel. Written Submissions of a non-scientific or non-technical nature will be accepted at any time up to the closing date for the hearings.

For more information, please call or write:

Paul Scott
Executive Secretary
Vancouver International Airport
Environmental Assessment Panel
510-750 Cambie Street
Vancouver, B. C.

AIR TRANSPORT ASSOCIATION OF CANADA
ASSOCIATION DU TRANSPORT AÉRIEN DU CANADA

ATAC

99 BANK STREET, SUITE 747, OTTAWA K1P 6B9
99, RUE BANK, PIÈCE 747, OTTAWA K1P 6B9

TEL: (613) 233-7727
FAX: (613) 230-8648

FOR IMMEDIATE RELEASE
OCTOBER 18, 1990

STRONG PUBLIC SUPPORT FOR PARALLEL RUNWAY: POLL

Vancouver -- A new public opinion poll reveals that there is continued strong public support for the construction of a parallel runway at Vancouver International Airport.

The poll discovered that the level of support has remained relatively unchanged since a similar poll was conducted in December of 1989, shortly after plans for the new runway were announced by Transport Canada.

Both polls surveyed over 400 residents living within the airport area. In each case, seven out of ten support the project. Half of these residents support the project strongly.

The poll also surveyed Greater Vancouver residents living outside the airport "noise footprint" and found that support for the parallel runway has increased to 81%.

The latest poll was carried out September 4-8. Both polls were conducted on behalf of the Air Transport Association of Canada (ATAC) by Vancouver-based Marktrend Marketing Research Inc.

The main reasons people gave for supporting airport expansion were the same in both studies: a belief that increased capacity is needed to keep up with the demand, relieve congestion and improve airport safety.

While supporters of the new runway outweigh opponents by more than three to one, there remains a small core of residents (15% - down slightly from the earlier poll) who are strongly opposed to the project, with the majority of these listing noise as their main concern.

A much greater proportion of people surveyed were aware of the action to phase out older, noisier aircraft with planes with quieter, more fuel-efficient engines. Canadian air carriers are spending $13 billion on these new aircraft which are 85% quieter than their predecessors. They will comprise 60% of the fleet using Vancouver by 1996 and virtually 100% by the turn of the century.

The poll also underlines the fact that Vancouver International Airport is a key ingredient in the economy of the Lower Mainland and all British Columbia. Nine in ten residents overall perceive that the airport contributes to the local economy.

Federal Environmental Assessment Review Office

Bureau fédéral d'examen des évaluations environnementales

VANCOUVER INTERNATIONAL AIRPORT

Environmental Assessment Review Panel

NEWSLETTER NO. 8

December 20, 1990

Public Hearings

The Panel will be starting its public hearings on January 31, 1991. A preliminary schedule and tentative agenda for the hearings is attached.

Anyone planning **to make a presentation to the Panel** at the hearings should **give notice** of their intention to the Panel Secretariat **as soon as possible** and **no later than January 24, 1991.** In accordance with the Panel's "Procedures for Public Hearings", anyone providing timely notice of their intention to participate will be included on the list of scheduled participants. Although time may be available at the end of sessions for unscheduled presentations, priority will be given to those who were scheduled in advance of the hearings.

Transport Canada Response to Panel Request

Transport Canada's response to the Panel's October 23, 1990 "Request for Additional Information and Consultation" has been received and copies circulated to all groups, agencies and individuals who have been actively involved in the review of Transport Canada's Environmental Impact Statement or those who have expressed an interest in receiving this document. A copy of the response document has also been placed in local public libraries. If you did not receive a copy of this document and require one, please contact the Panel Secretariat at the address noted below.

Technical Submissions

As you will see from the attached Public Hearings schedule, the main technical sessions (with the exception of one preliminary session on air quality) will not start until February 4, 1991. The Panel has, therefore, set January 21, 1991 (two weeks prior to the start of the main technical sessions) as the deadline for receipt of written submissions of a scientific or technical nature. Technical submissions received after the January 21, 1991 deadline date will only be accepted if they have been preceded by a complete outline of the submission, which includes a summary of all of the issues to be addressed in the main

Federal Environmental Assessment Review Office

Bureau fédéral d'examen des évaluations environnementales

VANCOUVER INTERNATIONAL AIRPORT ENVIRONMENTAL ASSESSMENT PANEL

Preliminary Schedule for Public Hearings (December 20, 1990)

DAY	SESSION TIME	SESSION TOPIC
Thursday, Jan. 31/91	2:00 PM - 5:00 PM	Opening Statements
	7:00 PM - 10:00 PM	Project Justification *
Friday, Feb. 1/91	9:30 AM - NOON	Air Quality **
	1:30 PM - 5:00 PM	Project Justification *
Saturday, Feb. 2/91	9:30 AM - NOON	General Presentations
	1:30 PM - 5:00 PM	General Presentations
Monday, Feb. 4/91	1:30 PM - 5:00 PM	Noise
	7:00 PM - 10:00 PM	Noise
Tuesday, Feb. 5/91	1:30 PM - 5:00 PM	Noise
	7:00 PM - 10:00 PM	Noise
Wednesday, Feb. 6/91	1:30 PM - 5:00 PM	Water Quality
	7:00 PM - 10:00 PM	Water & Air Quality
Thursday, Feb. 7/91	1:30 PM - 5:00 PM	Fish & Wildlife
	7:00 PM - 10:00 PM	Fish & Wildlife
Friday, Feb. 8/91	1:30 PM - 5:00 PM	Land Use
Saturday, Feb. 9/91	9:30 AM - NOON	Land Use

Additional sessions will be scheduled during the week of February 11-15, 1991 as required.

* Project Justification includes issues relating to project need, costs and benefits, and project alternatives.

** This technical session on Air Quality is being scheduled during the first week of hearings due to the unavailability of a key witness on this topic during the second week of hearings. Other technical sessions will not start until February 4, 1991.

The hearings are tentatively scheduled to be held in the Ballroom at the Executive Inn, 7211 Westminster Highway, Richmond, B. C.

Canada

Federal Environmental Assessment Review Office
510 - 750 Cambie Street, Vancouver, B.C. V6B 2P2 Telephone (604) 666-2431

Vancouver International Airport

Quick Facts.....

DECEMBER 1990

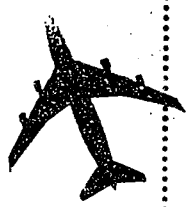
...ENVIRONMENTAL HEARINGS ON YVR'S PROPOSED PARALLEL RUNWAY ARE SCHEDULED TO BEGIN JANUARY 28, 1991. TRANSPORT CANADA RESPONDED TO THE ENVIRONMENTAL ASSESSMENT REVIEW PANEL'S REQUEST FOR FURTHER INFORMATION ON DECEMBER 15. COPIES OF THE ADDITIONAL INFORMATION, WHICH COMPLIMENTS THE PROJECT ENVIRONMENTAL IMPACT STATEMENT, IS AVAILABLE FROM THE EAR PANEL AND YVR'S PROJECT OFFICE OR CAN BE FOUND IN MOST LIBRARIES.

...SITE NUMBER 9 OF THE FIXED NOISE MONITORING SYSTEM IS ON LINE. THE MONITORING SITE AT UBC WAS LINKED TO YVR'S MONITORING SYSTEM EARLY IN DECEMBER AND REAL TIME NOISE LEVELS ARE BEING SHOWN ON THE NOISE DISPLAY IN THE SOUTH POD, LEVEL 3.

...YVR'S LATEST ANNUAL REVIEW, COVERING 1989/90 IS HOT OFF THE PRESSES. THE REVIEW INCLUDES FINANCIAL RESULTS FOR THE YEAR ENDING MARCH 31, 1990 AND MAJOR ACTIVITIES AT CANADA'S SECOND BUSIEST AIRPORT.

...YVR'S OPERATIONS IN 1989/90 MADE A PROFIT OF $20 MILLION, A HEALTHY RETURN ON INVESTMENT OF 14%. REVENUES ROSE TO A RECORD $64.3 MILLION AS EXPENDITURES REACHED NEARLY $44.3 MILLION. WITH AN ESTIMATED 9.3 MILLION PASSENGERS, THE PROFIT PER PASSENGER WAS $2.15 AS EXPENDITURE PER PASSENGER DECLINED TO $4.76.

...PERSONNEL IN TWO KEY AIR TRAFFIC CONTROL JOBS ARE SWITCHING HATS. BRUCE MCDONALD GOES TO THE AREA CONTROL CENTRE AS MANAGER ACC OPERATIONS WHILE MOE LUKIE BECOMES YVR'S TOWER CHIEF.



...WORK HAS BEGUN ON THE $8.5 MILLION NORTHWEST FINGER REDEVELOPMENT AND EXPANSION. GROWTH INDUSTRIES LTD. IS THE MAIN CONTRACTOR ON THE YEAR-LONG PROJECT WHICH WILL EXPAND THE INTERNATIONAL DEPARTURE HOLD ROOMS, ADD TO THE TRANSIT LOUNGE AND INCREASE THE DUTY FREE SHOP SIZE IN THE GATES 22-28 AREA.

Transport Canada Airports Authority Group
Transports Canada Groupe de gestion des aéroports
Canada

...A $25 MINIMUM LANDING FEE FOR ALL AIRCRAFT USING YVR'S RUNWAYS GOES INTO EFFECT 01 FEBRUARY 1991. FLOAT PLANES USING THE WATER AERODROME AND HELICOPTERS ARE EXEMPT FROM THE FEE. THE FEE, A MEANS OF EASING THE SERIOUS AIRSIDE CONGESTION PROBLEMS, WILL NOT APPLY FROM 0730-1030 SATURDAYS AND SUNDAYS, A TIME OF LOWER AIRFIELD DEMAND. THE OLD CONCESSION FEE ON AVIATION GAS WILL BE REDUCED TO THE SAME LEVEL AS THAT FOR TURBO FUEL.

...YVR OPERATIONS HAS PREPARED A WINTER OPERATIONS/DE-ICING PLAN IN COOPERATION WITH AIRLINES. THE PLAN INVOLVES HOLDING AIRCRAFT AT THE GATES, ASSIGNING AIRCRAFT DEPARTURE SLOT TIMES, AND DE-ICING STATIONS FOR AIRCRAFT TAXIING TO THE BUTTON FOR TAKEOFF. IT GOES INTO EFFECT IF DEPARTURE DELAYS GO BEYOND 15 MINUTES IN ICY, SNOWY WEATHER.

...AIRCRAFT MOVEMENTS IN OCTOBER INCREASED 5.6% OVER OCTOBER 1989, MORE ACCURATELY REFLECTING ACTUAL TRAFFIC CONDITIONS AS THE EFFECT OF FORMER SKYLINK AND AQUILA TRAFFIC ON STATISTICS HAS WORKED ITS WAY OUT OF MONTHLY COMPARISONS. SKYLINK CEASED OPERATIONS AT THE END OF SEPTEMBER 1989.

VANCOUVER INTERNATIONAL AIRPORT

ACTIVITY STATISTICS

JANUARY - OCTOBER 1990

PASSENGERS	1990	1989	% CHANGE
DOMESTIC	5,316,795	5,098,098	0.8
TRANSBORDER	1,974,307	1,770,393	11.5
INTERNATIONAL	1,329,746	1,373,564	-3.2*
TOTAL ALL SECTORS	8,440,848	8,242,055	2.4
AIRCRAFT MOVEMENTS			
RUNWAY MOVEMENTS	229,975	242,636	-5.2
HELICOPTERS, FLOAT PLANES, OTHERS	43,114	39,224	10.0
TOTAL	273,119	281,860	-3.1
CARGO AND AIR MAIL (TONNES)			
CARGO	101,967	100,332	1.6
AIR MAIL	15,889	17,062	-6.9
TOTAL	117,856	117,394	0.4

*APPARENT DECREASE OF 3% DUE TO CHANGE IN REPORTING PROCEDURE IMPLEMENTED IN JANUARY 1990.

AIRPORT MANAGEMENT CONTACTS

AIRPORT GENERAL MANAGER	FRANK O'NEILL	276-6208
MANAGER, SECURITY AND OPERATIONS	JOHN WILLIAMS	276-6159
MANAGER, COMMUNICATIONS	STEPHEN RYBAK	276-6333

THE CORPORATION OF THE
CITY OF PORT COQUITLAM

MEMORANDUM

TO: Environmental Protection Committee DATE: December 13, 1990

FROM: Kip Gaudry, P. Eng.,
Deputy City Enngineer

SUBJECT: **CALGARY ROSE GARDENS - DEMONSTRATION GARDENS**

RECOMMENDATION:

For information.

BACKGROUND & COMMENTS:

Alderman Keryluk suggested the City of Calgary may have a program that involved roses and/or gardens and there presentation to the public. We have contacted both the Calgary Engineering Department and the Parks and Recreation Department and could not identify any particular program that they sponsored or that they were aware of regarding this matter. If you could provide more details we may be able to chase it down further.

C.F. (Kip) Gaudry, P. Eng.
Deputy City Engineer

CFG:ck

Calgary

Calgary Rose Society
Annual Rose Shows.

→ Phillis Colter
↓ editor
→ Rose Roundup
→ memberships fees
→ look for new members
→ Garden Tours but
main thing is Rose Shows
→ had show in Heritage
Park Atrium ⇒
→ had it in Malls

Calgary
*⇒ Horticultural Society
⇒
* Rose Hybridized Canadian White
Star

THE CORPORATION OF THE
CITY OF PORT COQUITLAM

MEMORANDUM

TO: Environmental Protection Committee DATE: December 10, 1990

FROM: Kip Gaudry, P. Eng.,
Deputy City Engineer

RE: **SHELL SERVICE STATION - SHAUGHNESSY AND PITT RIVER ROAD INVESTIGATION OF POSSIBLE FUEL LEAK**

RECOMMENDATION:

For information.

BACKGROUND & COMMENTS

The Engineering Department was made aware that possibly some years ago fuel had spilled from the site of the current Shell Service Station at Shaughnessy and Pitt River Road and was still in the adjacent soils. Since we were about to commence construction of a sanitary sewer force main through the lane immediately north of the Shell Service Station we contacted Shell Oil and asked them to investigate the possible fuel leak. Shell Oil engaged a professional consulting company, Morrow Engineering of North Vancouver to carry out the investigation. Mr. Juan Beneitz of Morrow Engineering investigated the area surrounding the service station, particularly in the lane, and took samples for labratory analysis.

Mr. Beneitz advised us December 6, 1990 that all lab analysis was now complete and while trace amounts of some hydro carbons, indicating possible petroleum products, were found in a few samples, they were well with in allowable B.C. limits for residential areas. There opinion is that there may have been a fuel leak 12-15 years ago but it has basically had no effect on current soil conditions or adjoining properties. Nevertheless, they have dug monitoring sumps on the Shell service station property and will continue to monitor throughout the next 6-8 months to see wether any fuel can be detected.

The Engineering Department will keep in contact with Morrow Engineering and Shell Oil and advise the EPC should further information become available.

C.F. (Kip) Gaudry, P. Eng.
Deputy City Engineer

CFG:ck

cc: Igor Zahynacz, P. Eng.,
City Engineer

Gord Voncina
Operations Manager

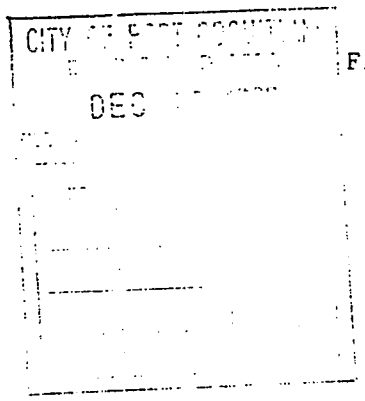
Greater Vancouver Regional District
4330 Kingsway, Burnaby, British Columbia, Canada V5H 4G8

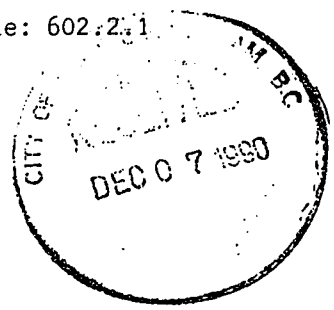
Telephone (604) 432-6200
Fax (604) 432-6251

Air Quality and Source Control Department - Tel (604) 436-6700 Fax (604) 436-6707

December 7, 1990

File: 602.2.1





Mr. R.A. Freeman
City Clerk
City of Port Coquitlam,
City Hall,
2272 McAllister Avenue,
Port Coquitlam, B.C.
V3C 2A8

Dear Mr. Freeman:

The discharge of waste, in the Greater Vancouver Region, is regulated by two separate agencies, through their collective administration of the Waste Management Act. Permits to emit air contaminants are issued by the Regional District, while those for special waste storage, effluent and refuse discharges are issued by the Waste Management Branch in Surrey.

For your information, please find enclosed copies of reports prepared for the GVRD Board of Directors. These reports provide summaries of emission Permit and Approval applications received by the GVRD Air Quality and Source Control Department and also of Permits and Approvals issued. Further information on Permits and Approvals or copies of air permit applications may be obtained from the:

Greater Vancouver Regional District
Air Quality and Source Control
4330 Kingsway
Burnaby, B.C. V5H 4G8
Phone: 436-6700

The Ministry of Environment forwards, to the GVRD, copies of Permit applications which they receive for the storage of special waste, refuse discharge and effluent discharge to receiving waters within the GVRD. I have enclosed a report, for your information, which summarizes applications which they have recently received. Further information or copies of these applications may be obtained from the:

Waste Management Branch,
Lower Mainland Region,
15320 - 103A Avenue,
Surrey, B.C. V3P 7A2
Phone: 584-8822

Yours truly,

Robert S. Smith
Superintendent, Enforcement Services
Air Quality and Source Control

SP/RSS/ch/68

AIR QUALITY AND SOURCE CONTROL - ENFORCEMENT SERVICES
SUMMARY OF PERMITS, APPROVALS & APPLICATIONS FOR SEPTEMBER, 1990

A. APPLICATIONS RECEIVED IN SEPTEMBER, 1990

1. **A.E. Concrete Precast Products Ltd.** - Concrete products manufacturing plant
5353 - 192nd Street, Surrey. New Permit VA-479.

This company has moved its operation from Langley to Surrey. Emissions from a cement silo are controlled with a baghouse.

2. **McLeod and Norquay Ltd.** - Metal heat treating plant.
12364 - 83A Avenue, Surrey. New Permit VA-480.

This company is moving their operation from Vancouver to Surrey. Emissions from molten salt heat treating baths will be controlled with a wet scrubber.

3. **Westroc Industries Limited** - A gypsum wallboard manufacturing plant.
1070 Derwent Way, Annacis Island, Delta. Amendment to Permit VA-82.

This company has applied for renewal of their Permit which is due to expire on December 31, 1990. A baghouse will be used to control new sources of emissions from 3 stucco storage silos and pneumatic conveying of fine ground materials.

4. **Canadian Aircraft Products Ltd.** - Aircraft components manufacturing.
2611 Viscount Way, Richmond. New Permit VA-478.

This company has applied for authorization for emissions from various aircraft component manufacturing processes such as cleaning, etching, painting, grinding, heat treating, dyeing, curing, heating and conversion coating. Emissions will be controlled with media filtration.

5. **Robar Industries Ltd.** - Iron foundry.
12945 - 78th Avenue, Surrey. Amendment to Permit VA-107.

This company has applied for authorization for emissions from an epoxy oven, heat treat oven, 5 grinders, belt sander and a cut-off machine. Particulate emissions will be controlled with a baghouse.

6. **Howe Sound Pulp & Paper Limited** - A sawmill and planing mill.
8890 Manitoba Street, Vancouver. Amendment to Permit VA-83.

This company has applied for renewal of their Permit which is due to expire on December 31, 1990. They have also changed antisapstain chemical use.

A. APPLICATIONS RECEIVED IN SEPTEMBER, 1990 (con't)

7. **Dow Chemical of Canada Inc.** - Bulk chemical storage and shipping facility.
1545 Bay St., North Vancouver District. Amendment to Permit VA-249.

This company has applied for renewal of their Permit which is due to expire on December 31, 1990.

8. **Pacific Bronze Ltd.** - Non ferrous foundry
1616 Pandora St., Vancouver. Amendment to Permit VA-139.

This company has applied for renewal of their Permit which is due to expire on December 31, 1990.

9. **Shell Canada Products Limited.** - Petroleum Refinery.
201 Kensington Avenue, Burnaby. Amendment to Permit VA-261.

This company has applied for authorization for replacement of their existing multi-jet ground level flare with a new 180 foot air assisted flare. The new flare is designed for improved combustion and reduced emissions during normal operation. The new flare will also substantially improve emissions during high loading periods.

10. **Warnock Hersey Professional Services Ltd.** - A fire test laboratory.
211 Schoolhouse Street, Coquitlam. Approval AP-132.

This company has applied for authorization for emissions from an exterior wall test stand for testing the fire rating of combustible building materials.

11. **Shell Canada Products Limited** - A petroleum tank farm.
Forest Grove & Underhill Avenue, Burnaby. Amendment to Permit VA-262.

This company has applied for renewal of their Permit which is due to expire on December 31, 1990.

12. **Mill and Timber Products Ltd.** - A lumber remanufacturing plant.
8818 Greenall Avenue, Burnaby. Amendment to Permit VA-56.

This company has applied for renewal of their Permit which is due to expire on December 31, 1990. They have also changed their name from Mill and Timber Products Ltd. to Haida Forest Products Ltd.

13. **Superburn Systems Ltd., A Division of Consolidated Environmental Technologies Inc.** - Test incineration facility.
240 - 801 Belgrave Way, Delta. New Approval AP-155

This company has applied for approval to carry out incineration testing on approximately 10-20 tonnes of soils containing chlorophenols. The material is classified as a special waste and all burning is proposed to be done in accordance with the Special Waste Regulation.

B. PERMITS/APPROVALS ISSUED IN SEPTEMBER, 1990

1. **Canadian Occidental Petroleum, Industrial Chemicals Division** - Chemical plant.
100 Amherst Avenue, North Vancouver. Amendment to Permit VA-10.

This company has received authorization for the venting of hydrogen to atmosphere during process variations. This Permit authorization allows the company to operate within the requirements of the Waste Management Act Spill Reporting Regulation. There will be no changes in emission quality as a result of this amendment.

2. **Tilbury Cement Ltd.** - A cement manufacturing plant.
7777 Ross Road, Delta. New Approval AP-141.

This cement manufacturing plant has received authorization for trial burns of shredded tire fuel in their cement kilns. Emission control is effected by high temperatures in the kiln and through electrostatic precipitation of particulates. Emission testing will be conducted during the trial burns.

3. **Taiga Forest Products Ltd.** - A wood pressure treating operation.
320 Ewen Avenue E., New Westminster. Amendment to Permit VA-378.

This Permit which was due to expire on September 30, 1990, has been renewed for an additional 5 year term.

4. **Torrefazione Coloiera & Importing Ltd.** - A coffee roasting plant.
#6 - 11771 Horseshoe Way, Richmond. Amendment to Permit VA-293.

This Permit which was due to expire on September 30, 1990, has been renewed for an additional 5 year term. Emissions from the coffee roaster will be further controlled by June 30, 1991, resulting in decreased emissions.

5. **Canterbury Coffee Corporation** - A coffee roasting plant.
13840 Mayfield Place, Richmond. Amendment to Permit VA-389.

This Permit which was due to expire on September 30, 1990, has been renewed for an additional 5 year term.

6. **Terminal City Iron Works Ltd.** A manufacturing machine shop foundry.
1909 Franklin Street, Vancouver. Amendment to Permit VA-206.

This Permit which was due to expire on September 30, 1990, has been renewed for an additional 5 year term. Opacity criteria have been made more restrictive on 7 sources.

AIR QUALITY AND SOURCE CONTROL - ENFORCEMENT SERVICES
SUMMARY OF PERMITS, APPROVALS & APPLICATIONS FOR OCTOBER, 1990

A. APPLICATIONS RECEIVED IN OCTOBER, 1990

1. (a) **Aqua Guard Technologies Inc.** Test incineration facility.
South foot of Nelson Rd. Richmond. New Permit AP-156

(b) **Superburn Systems Ltd., A Division of Consolidated Environmental Technologies Inc.** - Test incineration facility.
240 - 801 Belgrave Way, Delta. New Approval AP-157

(c) **Ticor Technology Ltd.** - Test incineration facility.
4623 Byrne Road, Burnaby. New Approval Ap-158

These companies have applied for authorization to conduct test burns of "Expo Lands" contaminated soil and other hydrocarbon contaminated wastes. Testing will be conducted to demonstrate compliance with the Special Waste Regulation. The Province of B.C. will grant a contract to one of the companies, allowing them to treat all the contaminated soils from the "Expo Lands Site". The successful company will then apply for a Permit to authorize emissions from their facility.

2. **Esco Limited** - A steel foundry.
1855 Kingsway Avenue, Coquitlam. Amendment to Permit VA-52.

This company has applied for authorization for emissions from an additional cutting booth and also to increase their operating days from 5 days/week to 7 days/week. Emissions from the new source will be controlled with a baghouse.

3. **Hal Industries Inc.** - An asphalt roofing and building paper manufacturer.
9681 - 187th Street, Surrey. Amendment to Permit VA-340.

This company has applied for renewal of their Permit which is due to expire on December 31, 1990. They have also applied for authorization for emissions from a third asphalt saturator which will be controlled with the current fume incinerator. Two natural gas fired asphalt tank heaters have also been added.

4. **Accurate Rubber Products Ltd.** - A rubber products manufacturer.
12771 No. 5 Road, Richmond. Amendment to Permit VA-341.

This company has applied for renewal of their Permit which is due to expire on December 31, 1990. They have also requested authorization for emissions from an additional lathe, an additional autoclave, a boiler and ventilation of buffing, fabricating and moulding areas.

A. APPLICATIONS RECEIVED IN OCTOBER, 1990 (con't)

5. **Tilbury Cement Ltd.** - A cement plant.
7777 Ross Road, Delta. Amendment to Permit VA-175.

This company has applied for authorization for emissions from 2 baghouse dust collectors associated with 2 air separators. The new baghouses will replace 4 smaller baghouses and are being installed to handle planned increases in production.

6. **Thompson Foundry Ltd.** - An iron foundry.
12540 - 82nd Avenue, Surrey. Amendment to Permit VA-161.

This company has applied for authorization for emissions from a natural gas fired core oven. This source, which was previously discharging to atmosphere indirectly via general building ventilation, is now being vented directly outside.

7. **Alberta Wheat Pool** - A grain elevator.
Foot of Cassiar Street, Vancouver. Amendment to Permit VA-217.

This company has applied for authorization for emissions from 3 additional baghouses handling grain dust. The baghouses are treating additional air which is required to improve internal ventilation of the grain elevator.

8. **PCL Plastics Corporation** - A plastic bag manufacturing plant.
7503 Vantage Place, Delta. Amendment to Permit VA-307.

This company has applied for renewal of their Permit which is due to expire on December 31, 1990. The company has changed its name from PCL Packaging Ltd. to PCL Plastics Corporation. They have also applied for authorization for emissions from garbage bag cutting and sealing machines, 3 corona treaters and four polyethylene pellet storage silos.

B. PERMITS/APPROVALS ISSUED IN OCTOBER, 1990

1. **Warnock Hersey Professional Services Ltd.** - A fire test laboratory.
211 Schoolhouse Street, Coquitlam. Approval AP-132.

This company has received authorization for emissions from an exterior wall test stand for testing the fire rating of combustible building materials.

2. **B.C. Fancy Sausage Co. Ltd.** - Food processing plant.
7680 Alderbridge Way, Richmond. Amendment to Permit VA-163

This Permit has been amended to include a compliance schedule for installation of additional control works on 8 recirculating smokehouses.

3. **International Forest Products Ltd., McDonald Cedar Div.** - A saw, planer & siding mill.
9269 Glover Road, Township of Langley. New Permit VA-467.

This company has received authorization for emissions from an existing sawmill and planermill. Particulate emissions are controlled by cyclones. Drying kilns are natural gas fired.

4. **International Forest Products Ltd.,** - A saw and planer mill.
11732 - 130th St., Surrey. Amendment to Permit VA-392

This company has received authorization for emissions from a third antisapstain spray booth. Emissions are controlled by mist eliminators.

5. **Haida Forest Products Ltd.** - A lumber remanufacturing plant.
8818 Greenall Avenue, Burnaby. Amendment to Permit VA-56.

This Permit which is due to expire on December 31, 1990, has been renewed for an additional 5 year term. They have also changed their name from Mill and Timber Products Ltd. to Haida Forest Products Ltd.

6. **BCM Manufacturing Ltd.** - An Overhead wood garage door manufacturer.
9494 - 198th Street, Township of Langley. New Permit VA-465.

This company has received authorization for emissions from woodworking equipment and a paint spray system. Particulates will be controlled with a cyclone and a baghouse. Paint overspray will be controlled by a water spray system.

7. **Beaver Electrical Machinery Ltd.** - An electrical motor repair shop.
7440 Lowland Drive, Burnaby, B.C. New Permit VA-472.

This company has received authorization for emissions from roasting electrical motors for rewinding, cleaning, painting, varnish baking and welding. Emissions are controlled with filters and afterburners.

B. PERMITS/APPROVALS ISSUED IN OCTOBER, 1990 (con't)

8. **Reliance Universal (B.C.) Limited.** - A paint manufacturer.
20100 No. 10 Highway, Langley. New Permit VA-475.

This company has received authorization for emissions from their existing plant. Particulate emissions from mixing operations are controlled with honeycomb filters.

9. **General Electric Canada Inc., Pacific Service Centre:** Electric motor repair
19606 - 96th Avenue, Langley Township. New Permit VA-477.

This company has received authorization for emissions from a new plant built to replace their current facilities in Burnaby and Kamloops. The discharge sources include bake ovens, burnoff ovens, soldering/welding stations, sandblasting room, paint booth and vacuum pressure impregnation tanks. Control works include a thermal afterburner and a baghouse.

10. **Freightliner of Canada Ltd.** A truck assembly plant.
4242 Phillips Avenue, Burnaby. New Permit VA-469.

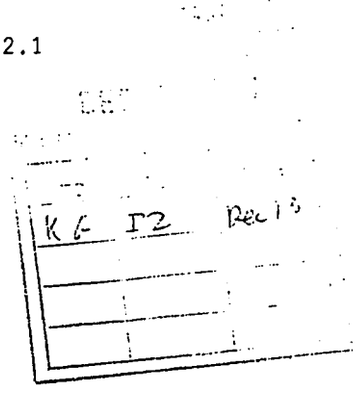
This plant has received authorization for emissions from a paint booth, bake oven, welding operations and truck diesel exhaust. Paint solvent emissions will be minimized through the use of high solids paints and paint overspray will be captured with dry filters.

Greater Vancouver Regional District
4330 Kingsway, Burnaby, British Columbia, Canada V5H 4G8

Telephone (604) 432-6200
Fax (604) 432-6251

Air Quality and Source Control Department - Tel (604) 436-6700 Fax (604) 436-6707

December 11, 1990 File: 602.2.1



Mr. R.A. Freeman
City Clerk
City of Port Coquitlam,
City Hall,
2272 McAllister Avenue,
Port Coquitlam, B.C.
V3C 2A8

Dear Mr. Freeman:

Further to my letter to you, dated December 7 1990, forwarding reports summarizing recent GVRD and Waste Management Branch Permit activities, I note that the latter report may not have been attached to your letter. I have enclosed it for your information and apologize for any inconvenience.

Yours truly,

Robert S. Smith
Superintendent, Enforcement Services
Air Quality and Source Control

SP/RSS/ch/26

Encl.

SUMMARY OF PERMIT APPLICATIONS SUBMITTED TO THE WASTE MANAGEMENT BRANCH FOR STORAGE OF SPECIAL WASTE, REFUSE DISCHARGE AND EFFLUENT DISCHARGE

A. Applications for storage of Special Wastes

1. Smith Processing Labs Inc., 2104 Front Street, North Vancouver District. Application PS-10494.

   The purpose of this application is to obtain a Permit for Special Waste storage and treatment at an existing facility recovering waste alcohol from waste printing ink.

2. Alcan Aluminum Limited - 12600 Vulcan Way, Richmond. Application PS-8200.

   This application is for the storage of additional electrical equipment containing PCBs.

3. Weiser Inc. - 6700 Beresford Street, Burnaby. Application PS-10493.

   This application is for a Permit to store special waste from the manufacture of door hardware and the decommissioning of electrical equipment.

4. British Columbia Hydro and Power Authority - 6517 Ladner Trunk Road, Delta. Application PS-70501.

   This application is for the storage of electrical equipment and cleanup materials containing PCBs.

5. Dominion Bank of Canada General Insurance Co. - 1477 W. Pender Street, Vancouver. Application PS-10515.

   This application is for the storage of electrical equipment containing PCBs.

B. Application for refuse discharge

(none)

C. Applications for effluent discharge to receiving waters

1. British Columbia Packers Limited - Steveston Highway, Richmond. Application PE-1830.

   The purpose of this application is to modify the level of treatment, effluent limits and the location of the outfall for process effluent and retort cooling water. The existing outfall will be used for uncontaminated cooling water from the reduction plant.

THE CORPORATION OF THE
CITY OF PORT COQUITLAM

MEMORANDUM

TO: B.R. Kirk
City Administrator

January 16, 1991

FROM: C.F. (Kip) Gaudry, P. Eng.
Deputy City Engineer

SUBJECT: **PITCH-IN CAMPAIGN - REQUEST FOR 1991 CONTRIBUTION**
(Environmental Protection Committee, January 15, 1991)

Recommendation:

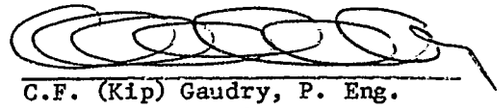
That Council approve a contribution of $600 to "Pitch-In British Columbia" for the 1991 year.

Background & Comments:

The Environmental Protection Committee considered a request from Outdoors Unlittered for a $600 contribution from the City in support of the 1991 "Pitch In British Columbia" campaign and other programs of Outdoors Unlittered.

"Pitch-In British Columbia" is one of the programs sponsored by Outdoors Unlittered. The "Pitch-In" week which is held in May of each year, encourages organized litter pickup, clean up and recycling programs throughout the Province. It is estimated that last year alone, over 500,000 British Columbia residents actively participated in some part of the "Pitch-In" campaign during the week of May 7 to 13, 1990.

The Environmental Protection Committee strongly supports the "Pitch-In" campaign and the Committee will continue to monitor and coordinate the "Pitch-In" campaign with other City activities. Once the information kits have been distributed throughout the Province the Committee will finalize plans for Port Coquitlam's participation and advise Council. The Committee anticipates reporting back to Council in April, 1991.



C.F. (Kip) Gaudry, P. Eng.
Deputy City Engineer

CFG:gc

PITCH-IN BRITISH COLUMBIA

Sponsored by Outdoors Unlittered

Len Traboulay
Mayor
City of Port Coquitlam
2580 Shaughnessy Street
Port Coquitlam, B.C.
V3C 2A8

Dear Mayor & Members of Council:

RE: Request for 1991 contribution $600

Congratulations on your election! We look forward to working with you over the next three years. Now let's deal with another upbeat event....

Volunteerism works! Just look at some of the statistics about PITCH-IN WEEK which took place May 7-13, 1990:

- 500,000 residents participated
- 1,591 organizations organized clean-up and recycling programs
- Action projects were undertaken in virtually every community in the province
- 5,895 projects ranging from schoolyard clean-ups to river/stream/lake enhancement projects were undertaken

PITCH-IN WEEK, the province's largest environmental action program proves that, given an opportunity, British Columbians want to do their part to clean up the environment and participate in recycling and other environmental action programs.

The bottom line? A total of $42 million in voluntary labour was donated during PITCH-IN WEEK. Add to that the millions of dollars of support services donated by local governments such as your own. And, on top of it all, the media contributed hundreds of thousands of dollars in free air time and advertising space in response to our request for public service advertising support.

PITCH-IN WEEK is only one of several programs sponsored by PITCH-IN BRITISH COLUMBIA, a non-profit organization formed in 1967 and made up of a number of other provincial organizations who are represented on our Advisory Board. These organizations are listed at the end of this letter. Other programs which we sponsor include the Community Pride Program, the Clean Beaches Campaign and an educational program for schools.

....2

Provincial Office: 200 - 1676 Martin Drive, White Rock, B.C., Canada V4A 6E7
Telephone: (604) 538-0577 Fax: (604) 538-3497

A large number of British Columbia's communities provide financial support to PITCH-IN BRITISH COLUMBIA to support the campaign and in recognition of the services provided by PITCH-IN to their local community groups, schools, Scouts, Guides and others. We hope your community will be able to contribute in 1991.

The financial contribution requested is indicated above. There is no increase in our request from last year. We recognize the economic pressures being faced by everyone. Hopefully you will also recognize that we face the same pressures and need your contribution more than ever!

Your contribution can be remitted now or in 1991. We would appreciate it very much if you would let us know your intentions so that we can make our budgetary plans.

PITCH-IN has become British Columbia's largest local environmental participation program. Every community benefits. Let's make sure the program continues and let's allow volunteerism to flourish in our beautiful province.

Kindest regards,

PITCH-IN BRITISH COLUMBIA

Allard W. van Veen, APR
President

UNION OF B.C. MUNICIPALITIES

Stella Jo Dean
Chairman,
PITCH-IN BRITISH COLUMBIA &
Alderman, City of North Vancouver

P.S. Members of the PITCH-IN BRITISH COLUMBIA Advisory Board are:

B.C. Council of Women
B.C. Chamber of Commerce
B.C. Women's Institutes
Boy Scouts of Canada
Girl Guides of Canada
B.C. Wildlife Federation
B.C. School Trustees Association
Union of B.C. Municipalities

Information Kits about PITCH-IN WEEK will be sent to schools and community groups in February, 1991.

THE CORPORATION OF THE
CITY OF PORT COQUITLAM

M E M O R A N D U M

TO: Kip Gaudry, P.Eng.
Deputy City Engineer

DATE: December 11, 1990

FROM: Danielle Pagé
Administration

RE: Pitch-In British Columbia Campaign

His Worship Mayor Traboulay has asked that this document be referred to the Environmental Protection Committee for its consideration.

Note that copies have not been distributed to the Aldermen.

Danielle

Att.

PITCH-IN BRITISH COLUMBIA

Sponsored by Outdoors Unlittered

Len Traboulay
Mayor
City of Port Coquitlam
2580 Shaughnessy Street
Port Coquitlam, B.C.
V3C 2A8

Dear Mayor & Members of Council:

RE: Request for 1991 contribution $600

Congratulations on your election! We look forward to working with you over the next three years. Now let's deal with another upbeat event....

Volunteerism works! Just look at some of the statistics about PITCH-IN WEEK which took place May 7-13, 1990:

- **500,000 residents** participated
- **1,591 organizations** organized clean-up and recycling programs
- Action projects were undertaken in virtually **every community** in the province
- **5,895 projects** ranging from schoolyard clean-ups to river/stream/lake enhancement projects were undertaken

PITCH-IN WEEK, the province's largest environmental action program proves that, given an opportunity, British Columbians want to do their part to clean up the environment and participate in recycling and other environmental action programs.

The bottom line? A total of $42 million in voluntary labour was donated during PITCH-IN WEEK. Add to that the millions of dollars of support services donated by local governments such as your own. And, on top of it all, the media contributed hundreds of thousands of dollars in free air time and advertising space in response to our request for public service advertising support.

PITCH-IN WEEK is only one of several programs sponsored by PITCH-IN BRITISH COLUMBIA, a non-profit organization formed in 1967 and made up of a number of other provincial organizations who are represented on our Advisory Board. These organizations are listed at the end of this letter. Other programs which we sponsor include the Community Pride Program, the Clean Beaches Campaign and an educational program for schools.

....2

Provincial Office: 200 - 1676 Martin Drive, White Rock, B.C., Canada V4A 6E7
Telephone: (604) 538-0577 Fax: (604) 538-3497

A large number of British Columbia's communities provide financial support to PITCH-IN BRITISH COLUMBIA to support the campaign and in recognition of the services provided by PITCH-IN to their local community groups, schools, Scouts, Guides and others. We hope your community will be able to contribute in 1991.

The financial contribution requested is indicated above. There is no increase in our request from last year. We recognize the economic pressures being faced by everyone. Hopefully you will also recognize that we face the same pressures and need your contribution more than ever!

Your contribution can be remitted now or in 1991. We would appreciate it very much if you would let us know your intentions so that we can make our budgetary plans.

PITCH-IN has become British Columbia's largest local environmental participation program. Every community benefits. Let's make sure the program continues and let's allow volunteerism to flourish in our beautiful province.

Kindest regards,

PITCH-IN BRITISH COLUMBIA

Allard W. van Veen, APR
President

UNION OF B.C. MUNICIPALITIES

Stella Jo Dean
Chairman,
PITCH-IN BRITISH COLUMBIA &
Alderman, City of North Vancouver

P.S. Members of the PITCH-IN BRITISH COLUMBIA Advisory Board are:

B.C. Council of Women
B.C. Chamber of Commerce
B.C. Women's Institutes
Boy Scouts of Canada
Girl Guides of Canada
B.C. Wildlife Federation
B.C. School Trustees Association
Union of B.C. Municipalities

Information Kits about PITCH-IN WEEK will be sent to schools and community groups in February, 1991.

PITCH-IN NEWS

Volume 21, No.2

Fall, 1990

*Left To Right – **Susan Wilks**, Girl Guides of Canada, **Stu Reeder**, Chairman, PITCH-IN CANADA. **Consetta Matak**, B.C. Chamber of Commerce, **Allard van Veen**, President, PITCH-IN CANADA, Alderman **Stella Jo Dean** and **John Pettifer**, Scouts Canada.*

Twenty Years of Service Recognized

To mark the 20th Anniversary of **PITCH-IN BRITISH COLUMBIA,** one director and several organizations were recognized by the provincial organization at its Annual General Meeting held in Vancouver in September, 1990.

Receiving plaques recognizing their twenty years of service to the Board were North Vancouver **Alderman Stella Jo Dean, Scouts Canada,** the **Girl Guides of Canada** and the **B.C. Chamber of Commerce.**

"Only one individual, other than myself, has been active as a director since 1970 and she remains strongly committed to the cause," stated **PITCH-IN CANADA** President Allard van Veen in praising the tireless efforts of Alderman Stella Jo Dean whose involvement in environmental activities began in 1966 when she organized her first clean-up in North Vancouver.

McDonald's Supports PITCH-IN CANADA

McDonald's Restaurants of Canada will be the first fast-food restaurant in Canada to support **PITCH-IN CANADA** and its objectives by imprinting the organization's PITCH-IN symbol on its various packaging materials.

"We've entered into an agreement with McDonald's enabling them to utilize our symbol and we are very pleased to be working with them," states Allard van Veen, President, PITCH-IN CANADA, in announcing the packaging identification program which is aimed at encouraging McDonald's customers to properly dispose of packaging, especially after they have left the restaurant's premises.

PITCH-IN CANADA, in 1990, launched a major campaign to obtain the support and cooperation of the packaging industry and major food and beverage outlets. "We are pleased that Canada's largest fast-food restaurant has become PITCH-IN CANADA's first supporter!"

The "Trash Blasters" have been an important part of the **"PITCH-IN CLEAN UP EDMONTON"** Campaign which draws support from a wide range of industries, community groups and schools.

Hamilton has Right to be Proud

The City of Hamilton is out to make a name for itself....spotless! And, according to PITCH-IN CANADA President Allard van Veen, they are being successful.

"The **Clean Hamilton Committee,** under the enthusiastic leadership of **Alderman Brian Hinkley,** is an excellent example of how a community is able to solve problems by working together and by involving people," states van Veen who visited the southern Ontario city in August, 1990 scouring its streets and back alleys with Hinkley to confirm the effectiveness of the Clean Hamilton Committee's program.

Hamilton has become one of the cleanest cities in Canada by tackling litter and waste at its sources and by carrying out an extensive, year-round, promotion and education campaign aimed at involving residents and, especially, young people.

"Spotless", Keep Hamilton Clean Committee's mascot, greets an enthusiastic visitor to one of the Committee's several shopping centre displays while ***Alderman Brian Hinkley,*** *Chairman of the Committee, hands information to residents of Hamilton about the need for everyone to participate in his community's PITCH-IN campaign.*

"We're here to educate and to involve the people in keeping the city clean," says Brian Hinkley who is just as comfortable chairing his city's Finance Committee as handing out environmental literature promoting the concept of PITCH-IN at local malls or on city street corners.

The Clean Hamilton Committee, soon to be certified as a PITCH-IN CANADA Community Pride Community, can take credit for a wide range of activities which involve many of Hamilton's residents.

"We coordinate PITCH-IN WEEK and we sponsor the **Post Busters Campaign** which encourages citizens to tear off any bills they see on utility poles or other public property and mail them to City Hall," beams Hinkley, whose committee then writes letters to the companies and organizations listed on the bills, warning them that posting is illegal.

An annual **Hot Spots Litter Tour** rates Hamilton's ten worst locations for unsightly litter, then follows up with a letter to the owners.

One of the Committee's most recent projects is the production of the **"Spotless, Hamilton's Litter Watchdog"** 1991 colouring calendar featuring the Committee's mascot, "Spotless", which was created by local cartoonist Stephen Toth.

States Hinkley, whose Committee is a financial supporter of **PITCH-IN ONTARIO,** "It has been a joy to work with PITCH-IN ONTARIO and **PITCH-IN CANADA.**"

Ellen Brown, *a member of the* ***Congregational Christian Fellowship Church*** *in* ***Spruce Grove,*** *Alberta, enjoyed being a part of her church's team effort to clean up Highway 16X as part of the* ***Alberta Transportation & Utilities'*** *Roadside Clean-Up campaign held on May 5, 1990. The campaign is held in cooperation with* ***PITCH-IN ALBERTA*** *and supported by* ***NOVA Corporation of Alberta*** *and* ***Husky Oil Limited.***

Environment Ministers Join PITCH-IN CANADA Board

Two new Directors have been appointed to PITCH-IN CANADA's Honourary Board. They are Federal Minister of Environment, **Robert R. de Cotret** and Manitoba Environment Minister **Glen Cummings.**

"We are pleased to increase the number of our Honourary Directors," states **Stu Reeder,** Chairman, PITCH-IN CANADA, adding "We hope to make some additional appointments in the near future."

The new appointees join the Environment Ministers from British Columbia, Alberta and Ontario.

PITCH-IN NEWS is published by PITCH-IN CANADA, a national, non-profit charitable organization founded in 1967 to conduct environmental education and improvement programs, emphasizing the litter control and recycling aspects of solid waste management. PITCH-IN is a Registered Trademark. For further information about PITCH-IN CANADA or the use of the PITCH-IN trademark contact the National Office at 200-1676 Martin Drive, White Rock, B.C., V4A 6E7. Telephone (604) 538-0577. Fax (604) 538-3497. To order PITCH-IN materials contact PITCH-IN CANADA at 45-9912-106 Street, Edmonton, Alberta, T5K 1C5. Telephone: (403) 429-0517 Fax: (425) 425-5400

Advisory Council Appointments Announced

PITCH-IN Advisory Councils have been formed in **Manitoba, Ontario** and **New Brunswick** and additional appointments have been made to the Councils in **Alberta** and **Saskatchewan.**

The following new appointments were made:

In Alberta:

Mr. Jean De Champlain	Alberta Association of Municipal Districts & Counties
Mr. Andy Von Busse	Alberta Fish & Game Association
Mr. Bob Burrows	Alberta Parks & Recreation Association
Alderman Art Sandford	Alberta Urban Municipalities Association
Ms. Lorelei Campbell	Junior League of Edmonton
Mr. Vern Borgedahl	Lions Club International
Ms. Linda Poetz	Tourism Industry Association of Alberta

In Saskatchewan:

Mr. Larry Adams	Boy Scouts of Canada
Mrs. Muriel Conacher	Saskatchewan School Trustees Association
Ms. Rosalyn Walker	Saskatchewan Women's Institutes

In Manitoba:

Reeve Donald J. Melnyk	Association of Rural Municipalities
Mr. Lilas Bond	Boy Scouts of Canada
Mrs. Ruth Henry	Girl Guides of Canada
Mayor Henry Wiebe	Manitoba Association of Urban Municipalities
Mrs. Blanche Bjarnason	Manitoba Association of School Trustees
Mr. Brian Kelly	Manitoba Chamber of Commerce
Mrs. Judy Croy	Manitoba Council on Rehabilitation and Work, Inc.
Mr. Robert J. Potter	Manitoba Municipal Administrators Association
Mr. Roy Turnock	Manitoba Naturalists Society
Mrs. Mona Bossi	Manitoba Women's Institutes

In Ontario:

Mr. Frank Spence	Boy Scouts of Canada
Mrs. Hilde Morden	Federated Women's Institutes of Ontario
Mrs. Elaine Rehor	Ontario Chamber of Commerce
Mrs. Freya Long	Ontario Federation of Anglers & Hunters
Mr. J.G. Strickland	The Federation of Ontario Cottagers' Association Incorporated

In New Brunswick:

Mr. Randy Robinson	Ministry of Tourism, Recreation and Heritage
Mr. Mike Breneol	New Brunswick Wildlife Federation

*Left To Right: **Darlene McIntosh,** Coordinator, PITCH-IN ALBERTA, PITCH-IN ALBERTA Chairman **Bette Ballhorn, Bob Rippon,** Alberta Environment, **Beryl Ballhorn,** Alberta Women's Institute. PITCH-IN CANADA President **Allard van Veen, Jean De Champlain,** Alberta Association of Municipal Districts & Counties and **Joy Finlay,** O.C.*

Alberta Board Members Receive Plaques

Commemorative plaques were presented to mark fifteen years of service to several directors of, and organizations represented on, the provincial Board of **PITCH-IN ALBERTA** at the organization's Annual General Meeting held in Edmonton in September, 1990.

Recognized for fifteen years of individual service were the organization's Treasurer, **Don Dick,** Executive Director of **Scouts Canada, Joy Finlay,** an Environmental Education Consultant and a recent recipient of the Order of Canada and **Bette Ballhorn,** Past President of the **Alberta Women's Institute** and Chairman of PITCH-IN ALBERTA. Recognized for fourteen years of service was **Margaret Bowes,** Chairman of the **Grande Prairie Beautification Committee.**

Organizations receiving recognition for fifteen years of support were **Scouts Canada,** the **Girl Guides of Canada,** the **Alberta Women's Institute** and **Alberta Environment.**

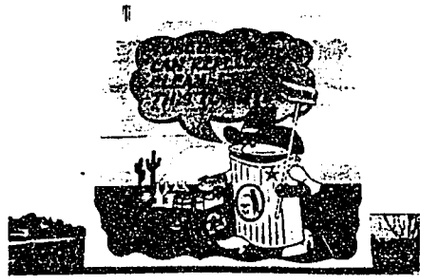
Hearst Participates to Make a Difference

Hearst, Ontario's PITCH-IN Committee has launched a major initiative to modify their community's attitudes and to show that they can make a difference to the environment.

The Committee, comprised of representatives of the municipality, local schools, Scouts, the Hunters and Anglers Voyageur Club, the BIA, the Ministry of Natural Resources and the Ontario Provincial Police, was formed early in 1990 and members have already undertaken a number of steps to make residents and tourists more environmentally aware.

"Approximately ten thousand people attended Springfest where we shared a booth with the Ministry of Natural Resources and distributed PITCH-IN car litter bags," states **Marcel Dillon,** Coordinator, PITCH-IN, adding "we distributed 2,000 badges to participants in our clean-up programs."

The Committee, which has installed two 8' by 8' signs featuring the 1990 campaign theme at the entrance to their community, is producing a short video on their efforts which will be ready for their 1991 program.



*Residents and visitors to **Hearst,** Ontario entering the community on Highway 11, both east and west, are made aware of the community's involvement in PITCH-IN by 8' x 8' French and English highway signs.*

Dixon Appointed Advisor to Marine Research Program

Trevor Dixon, a leading U.K. marine pollution expert, has been appointed Advisor. Marine Research Program by PITCH-IN CANADA.

"We are very pleased to work with Mr. Dixon as we establish the parameters for our national Clean Beaches Research Program," states Allard W. van Veen, President, PITCH-IN CANADA, adding "Mr. Dixon is widely recognized for the work he has undertaken in developing and establishing a number of research programs in England, Europe and Africa."

Trevor Dixon, recently appointed Advisor to PITCH-IN CANADA's Clean Beaches Program, participated in a recent international Conference on Pollution of the Sea.

Mr. Dixon is Scientific Advisor to the London-based international **Advisory Committee on Pollution of the Sea** and Director of the **Tidy Britain Group's** Marine Research Program. Both the Tidy Britain Group and PITCH-IN CANADA are members of Clean World International, an international Secretariat for national organizations with interests in recycling and the proper disposal of waste.

PITCH-IN CANADA's Clean Beaches Program consists of three stages: research, clean-up and an "Adopt-a-Beach" program. The research program is currently being developed and will be tested on British Columbia's coastlines in cooperation with the **British Columbia Ministry of Environment.**

*All of the 13 students, principal/teacher **Mark Wickham** and tutor **Renee Wickham** at **Apisasin Public School** in the Northern Settlement of **Kinoosoo** in Saskatchewan participated in PITCH-IN WEEK by initiating clean-up activities and planting trees.*

Logging Road Yields 6 Tonnes of Waste

More than 12,000 pounds of garbage were collected by the **Ladysmith Sportsmen's Club** on Vancouver Island, B.C., during the Club's week-long PITCH-IN campaign. The Club is a member of the **B.C. Wildlife Federation.**

"Over 20 club members focused their attention on the lower 3 kilometres of the Fletcher Challenge logging road which has been used as a private dumping area for many years," reports **Brian Grouhel,** Club Secretary.

Organized by Past President **Gary Atkinson,** club members collected items ranging from old freezers and stoves to plastic and styrofoam.

*Securing the load is all part of a day's work by members of the **Ladysmith Sportsmen's Club** who hauled tonnes of trash from an abandoned logging road used as a local dumping ground.*

Matsqui-Abbottsford Launches Comprehensive Program

8,778 students from 26 elementary and five secondary schools made sure that the **District of Matsqui** and **Abbottsford's** PITCH-IN WEEK was a resounding success.

"The students were involved in cleaning up our community's parks, trails, creeks, city streets and school yards," states Matsqui's **Alderman Christine Lamb** who coordinated the campaign.

"Recyclables were separated from the collected waste, a number of storm drains were marked with yellow fish and pamphlets, outlining the serious environmental dangers many household cleaners, fertilizers and pesticides pose, were delivered to homeowners."

According to Lamb, the level of participation was an indication of the students' concern for the environment and pride in their community.

*Grade 1 students of **Centennial Park Elementary** in **Abbotsford** combined clean-up activities with an education campaign to remind people to be more responsible towards the environment. (John Morrow photo)*

*As part of PITCH-IN WEEK in British Columbia, students and Vice Principal **Des McKay** of **W.J. Mouat Secondary** in **Abbotsford** mark storm drain with yellow fish to remind residents about the dangers of releasing toxic substances into drains which could eventually end up in fish-bearing streams.*

Answers to the ALUMINUM QUIZ

See page 6

1. 100,375,000,000 cans are bought each year
2. The value of all empty aluminum cans is $2,609,750,000
3. 2,007,500,000 pounds of aluminum are reclaimed with a value of $1,304,875,000 which, if divided, would provide every person with $4.75
4. In 1995, 75% of aluminum cans or 75,281,250,000 cans are projected to be recycled with a value of $1,957,312,500

Singapore Examines PITCH-IN

PITCH-IN CANADA recently provided assistance to **Singapore's Ministry of Environment** as they prepared to launch an environmental awareness program entitled "Good Environment Day".

"The objective of our campaign is to inculcate a greater sense of awareness and responsibility towards nature and the environment." states **Lim Chuan Poh,** a spokesman for Singapore's Permanent Secretary for the Environment.

As a founding member of **Clean World International,** the international Secretariat concerned with the proper disposal of waste and recycling, PITCH-IN CANADA often exchanges information about its programs.

ALUMINUM QUIZ!

Answers to the following quiz can be found on page 5. Your calculations should be based on the combined population of Canada and the United States being 275 million.

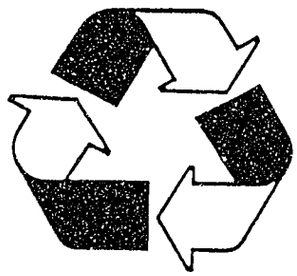
1. Every person in Canada and the United States purchases about one aluminum can per day. How many cans are bought each year?

2. If a pound of aluminum cans is worth about 65¢ to the aluminum reprocessor and if there are about 25 empty cans in one pound, what is the value of all of the empty aluminum cans produced in Canada and the United States each year?

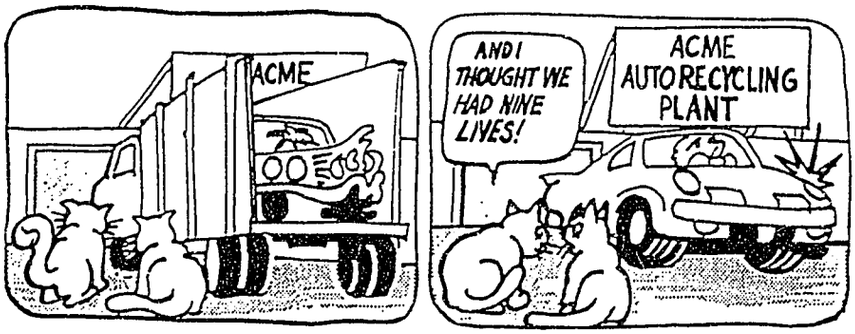
3. If approximately 50% of all aluminum cans produced in Canada and the United States are now recycled, how many cans are recycled, how many pounds of aluminum are reclaimed, what is its value and if this were evenly divided among the population of Canada and the United States, how much money would you receive?

4. If the rate of recycling aluminum cans is projected to increase by 50% by 1995, what percentage of aluminum cans will be recycled at that time? How many cans will be recycled and what will they be worth?

QUIZ ANSWERS CAN BE FOUND ON PAGE 5

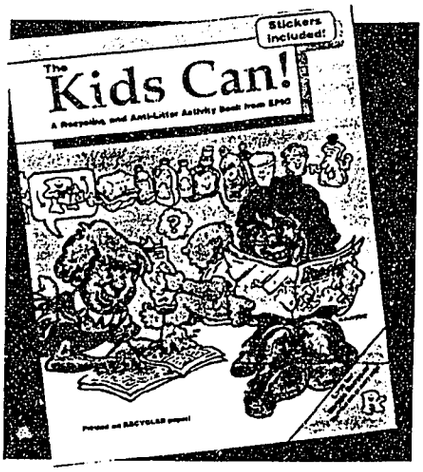


PITCH-IN CANADA!



'Kids Can!'

Colouring Book Available



'Kids Can', a new environmental colouring book for grades 3-5, is being distributed by **PITCH-IN CANADA** to every elementary school in the country courtesy of the **Environment & Plastics Institute of Canada (EPIC).**

Developed by EPIC's Litter Committee, of which PITCH-IN CANADA is a member, the colouring book can be duplicated by teachers or additional copies and accompanying sticker sheets can be ordered from PITCH-IN CANADA for a small charge to cover postage and handling.

The colouring book, which focuses on plastics, recycling and litter, is intended to create an improved understanding of plastics and the issues facing the plastics industry in Canada, according to EPIC.

To receive an order form for 'Kids Can', contact **PITCH-IN CANADA's Material Order Centre** at 45, 9912-106th Street, Edmonton, Alberta, T5K 1C5.

TM

RETURN TO PITCH-IN CANADA:

National Office:
200 - 1676 Martin Drive
White Rock, B.C. V4A 6E7

THIS RECYCLED PAPER CONTAINS POST-CONSUMER WASTE.
PITCH-IN CANADA!

Coquitlam SHARE Society

SHARE

Annual General Meeting

June 1, 1990

The Board of Directors and Staff

Welcome You

As SHARE Begins Its 19th Year of Service

To Families and the Community

COQUITLAM SHARE SOCIETY
ANNUAL GENERAL MEETING
JUNE 1, 1990

AGENDA

1) Call to Order
2) Minutes of June 9, 1989
3) Auditor's Report
4) Chairman's and Executive Director's Report
5) Special Resolution to Change the Name of the Society
6) Appointment of Auditor
7) Appointment of Legal Counsel
8) Election of New Members of the Board
9) Awards
10) Adjournment

COQUITLAM SHARE SOCIETY

Annual General Meeting
June 9, 1990

MINUTES

1. CALL TO ORDER

Dale Christenson called the meeting to order at 6:35 p.m.

2. MINUTES

M/S/C Purdy / Ohirko:

"that the minutes of the Annual General Meeting held June 3, 1988 be accepted."

3. TREASURER'S REPORT

M/S/C Aske / Lemp:

"that the audited statements for 1988-89 be accepted as presented."

4. ANNUAL REPORTS

M/S/C Simms / Brown:

"that the Chairperson's Report and the Executive Director's Report be accepted."

5. ELECTION OF DIRECTORS

The Chair called upon Blanche Lemp, Chair of the Nominating Committee, to announce the nominees to the Board of Directors, as recommended by the committee.

The nominees were:

John Burdikin
Dale Darychuk
Helen Eades
Myrna Larson
Eleanor Ward
Dale Christenson
Al Davies
Nancy Fernandez
Mary Olson

Since there were as many nominees as there were positions vacant, Blanche declared the nominees elected.

6. APPOINTMENT OF AUDITOR

M/S/C Aske / Ward:

"that Earl Nordstrand be appointed as the Society's Auditor for 1989-1990."

7. APPOINTMENT OF LEGAL COUNSEL

M/S/C Martin / Burdikin:

"that Rick Payne be appointed as Legal Counsel to the Society for 1989-1990."

8. AWARDS

The Chair called upon Stephanie Ohirko to present the Volunteer of the Year Award. Stephanie announced that Robin Foerster had been chosen to receive the award. Ted Kuntz accepted on behalf of Robin, who was out of town on holiday.

The Chair called upon Sylvia Simms and Joanne Granek to present the Gary Roberts Award. The award was presented to Ted Fridge, Administrator of James Park Elementary School.

The Chair called upon Eleanor Ward and Jerry Martin to present awards to past Board members. Eleanor presented an award to Pat Ban. Jerry presented an award to Debbie Taylor. Awards were also given to May Reith and Bill Glackman, who were not able to be present.

9. ADJOURNMENT

M/S/C Simms / Burdikin:

"that the meeting be adjourned."

The meeting adjourned at 6:50 p.m.

COQUITLAM SHARE SOCIETY

(Incorporated under the British Columbia Society Act)

BALANCE SHEET AS AT MARCH 31, 1990

ASSETS

	1990	1989
Current		
Cash	$ -	$ 70,055
Short term investments	197,370	73,824
Accounts receivable	106,930	61,022
Prepaid expenses	23,015	20,800
	$327,315	$225,701
Replacement Reserve Funds	12,604	9,418
Fixed - Note 2	487,662	498,588
	$827,581	$733,707

LIABILITIES

	1990	1989
Current		
Excess of cheques written over cash in bank	$ 47,842	$ -
Accounts payable and accrued liabilities	121,408	86,940
Grant advances - Note 3	86,290	171,993
Deferred revenue - Note 4	112,733	25,114
Current portion of mortgage payments	7,400	5,000
	$375,673	$289,047
Replacement Reserve	13,905	12,018
Mortgages Payable - Note 5	236,540	245,760

EQUITY

Members' Equity		
Program evaluation	5,000	5,000
Operations		
Opening balance	$181,882	$209,162
Excess (shortage) of revenue over expenditures	14,581	(27,280)
Closing balance	$196,463	$181,882
Total equity	$201,463	$186,882
	$827,581	$733,707

Approved by the Directors:

Director

Director

COQUITLAM SHARE SOCIETY

STATEMENT OF REVENUE AND EXPENDITURES

FOR THE YEAR ENDED MARCH 31, 1990

	1990	1989
Revenue:		
M.S.S.H.	$1,613,151	$1,748,956
Health	449,572	151,608
Ministry of labour	181,068	45,000
C.M.H.C.	18,212	16,691
Employment and immigration	198,622	216,651
Solicitor General for Canada	1,897	-
United Way	64,230	35,708
Food bank donations	75,768	64,989
Bingo	35,010	30,050
Other donations	48,114	31,762
Service operations	248,221	209,882
Recovery of expenses	18,224	14,199
Interest	24,247	13,476
Other	36,322	39,358
	$3,012,658	$2,618,330
Expenditures:		
Salaries and benefits	$2,133,410	$1,863,523
Building occupancy	248,494	196,371
Office	98,046	110,555
Recruitment and education	63,610	55,602
Promotion and publicity	49,471	52,537
Purchased services	51,033	55,033
Program supplies	91,263	14,207
Transportation	73,125	83,781
Food, clothing, medical	48,523	62,035
Recreation and education	52,812	56,905
Depreciation	50,797	34,724
Replacement reserve	1,300	1,300
Insurance	5,711	5,112
Miscellaneous	30,482	53,925
	$2,998,077	$2,645,610
Excess (shortage) of revenue over expenditures	$ 14,581	($ 27,280)

COQUITLAM SHARE SOCIETY

STATEMENT OF CHANGES IN FINANCIAL POSITION

FOR THE YEAR ENDED MARCH 31, 1990

	1990	1989
Cash provided by (Used In) operating activities		
Operations		
Excess (shortage) of revenue over expenditures for the year	$ 14,581	($ 27,280)
Add: Items not involving cash:		
Depreciation	50,797	34,724
Replacement reserve provision	1,300	1,300
	$ 66,678	$ 8,744
Net change in other current assets and liabilities	(11,738)	125,306
Cash provided by (Used In) operating activities	$ 54,940	$134,050
Cash provided by (Used In) investment activities		
Purchase of fixed assets	($ 73,637)	($195,600)
Funding of CMHC replacement fund	(2,600)	-
Specified donations against real property improvement	33,766	-
Proceeds on disposal of fixed assets	-	3,067
Cash provided by (Used In) investment activities	($ 42,471)	($192,533)
Cash provided by (Used In) financing activities		
Reduction in mortgage debt	($ 6,820)	($ 5,328)
Cash provided by (Used In) financing activities	($ 6,820)	($ 5,328)
Net increase (decrease) in cash	$ 5,649	($ 63,811)
Cash and short term investments beginning of year	143,879	207,690
Cash and short term investments end of year	$149,528	$143,879
Comprised of:		
Cash	($ 47,842)	$ 70,055
Short term investments	197,370	73,824
	$149,528	$143,879

COQUITLAM SHARE SOCIETY

NOTES TO FINANCIAL STATEMENTS

MARCH 31, 1990

1. Significant accounting policies.

The following is a summary of significant accounting policies of the Society.

a) Revenue recognition.

Revenue from government service contracts are recognized as earned under the terms of the applicable agreement.

Revenue from service operations are recognized as earned.

Private bequests and grants are recognized when received.

Cash donations are recognized when received other than specified donations which are recognized in the period when utilized.

Grants or donations for the purchase of fixed assets are recognized on a basis prorated over the useful life of the asset.

Volunteer labour and donated services are not recorded as the revenue and expense are offset.

b) Fixed assets and depreciation.

Fixed assets are recorded at cost. Depreciation is provided over the estimated useful lives of the assets at the following annual rates on a straight line basis after providing for estimated residual values.

Vehicles	20%	Computer equipment	
Program equipment	20%	Pre 1988	20%
Office equipment	20%	Post 1987	30%
		Leasehold improvements	- Life of Lease

No depreciation is provided for on real property.

2. Fixed assets

	1990	1989
Land and buildings	$340,970	$370,261
Vehicles	40,932	40,932
Program equipment	56,549	52,799
Computer equipment	70,403	51,017
Office equipment	49,838	37,206
Leasehold improvements	77,460	44,066
	$636,152	$596,281
Accumulated depreciation	148,490	97,693
	$487,662	$498,588

During the year bingo and casino proceeds received in the amount of $33,766 were specifically allocated in reduction of the cost of major renovations to the building at 734 MacIntosh incurred in 1989.

3. Grant advances

Grant advances represent government and other funding advances received but not placed in use because of specific use or timing restrictions.

Grant advances consist of the following as at March 31,

	1990	1989
Province of B. C. refundable operating advance	$ -	$ 6,214
Ministry of Health, Province of B.C. - speech and Language program	-	127,000
Ministry of Labour, Province of B.C. - alcohol and drug program	60,000	38,000
Ministry of Health, Province of B.C. - community garden program	5,000	-
Employment and Immigration Canada - EAP program	21,290	
C.M.H.C.	-	779
	$ 86,290	$171,993

4. Deferred revenue

Deferred revenue represents funding received but not yet earned. It includes funding received for specified purposes and funding utilized for capital acquisitions which is brought into revenue over the write-off period applicable to the specific capital item.

Deferred revenue consists of the following as at March 31,

	1990	1939
Ministry of Health, Province of B.C. - speech and language program	$ 32,467	$ -
Ministry of Labour, Province of B.C. - alcohol and drug program	28,500	-
Ministry of Labour, Ministry of Regional Development, Province of B.C. - Cap II program	16,500	-
Foodbank donations	28,919	25,114
Specified donations	6,347	-
	$112,733	$ 25,114

5. Mortgages payable

Mortgages payable consist of the following:

Firstline Trust repayable in equal monthly instalments of $1,008 at 11.125% interest, until September 1, 1993 when the total balance then outstanding will be due and payable. This mortgage is secured by land and building at 734 MacIntosh, Coquitlam, B.C.	$ 90,434	$ 92,565
Co-operative Trust Company of Canada repayable in equal monthly instalments of $1,775 at 12.00% interest, until August 1, 1992 when the total balance then outstanding will be due and payable. This mortgage is secured by land and building at 2994 Pasture Circle, Coquitlam, B.C.	153,506	158,195
	$243,940	$250,760
Less: current portion of payments	7,400	5,000
Long term portion	$236,540	$245,760

6. Lease commitments

The Society is committed under lease agreements for the rental of office space and equipment extending to 1995. Minimum lease payments required under these agreements over the next five years are as follows:

1991	$ 99,086	1994	$ 5,591
1992	99,846	1995	2,795
1993	64,900		

AUDITOR'S REPORT

To the Members of Coquitlam Share Society

I have examined the balance sheet of Coquitlam Share Society as at March 31, 1990 and the statements of revenue and expenditures and changes in financial position for the year then ended. My examination was made in accordance with generally accepted auditing standards and accordingly included such tests and other procedures as I considered necessary in the circumstances, except as referred to in the following paragraph.

Coquitlam Share Society derives part of its income from the general public in the form of gifts, bequests and contributions which are not susceptible to complete audit examination. Accordingly my work in respect of this revenue was limited to accounting for the amounts recorded in the books of the Society.

Note 1 to the financial statements describes the depreciation policy with respect to the Society's fixed assets. The note indicates that the Society is not depreciating its real property. In this respect the financial statements are not in accordance with generally accepted accounting principles which require that fixed assets be written off over their estimated useful lives.

In my opinion, except for the effects of any adjustments which might have been required had I been able to completely verify gifts, bequests and contributions and except for the effects of the failure to record depreciation as described above, these financial statements present fairly the financial position of the Society as at March 31, 1990 and the results of its operations for the year then ended in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Earl V. Hardstrand
Chartered Accountant

Coquitlam, B.C.
June 1, 1990

JOINT ANNUAL REPORT
from the
CHAIRMAN OF THE BOARD and the EXECUTIVE DIRECTOR
ANNUAL GENERAL MEETING
COQUITLAM SHARE SOCIETY
JUNE 1, 1990

We originally expected 1989 would be a stable year of consolidation - one that saw an integration of programs, structure and staffing. It turned out to be much more active and challenging!

The Ministry of Social Services and Housing cancelled major funding for the Kincaid Treatment Center and cut back funding by one third for two other major programs - Special Services to Children and Satellite. New funding was received late in the year for a Wife Assault/Parent - Teen counseling program.

Protracted but unsuccessful negotiations were held with the Ministry of Health, Mental Health Branch, to continue and expand the Adolescent Suicide Assessment Program with the result that assessment services for youth and adults are now being offered by another agency based in New Westminster.

Two new programs that had been contracted for late in the previous fiscal year were brought to fully operational status - Drug and Alcohol Counseling funded by the Ministry of Labour, and Speech and Language Therapy for Pre-Schoolers funded by the Ministry of Health. New facilities were found for the Speech and Language Program.

We successfully proposed a new housing project for 43 Housing Society and were awarded funds to build and manage a 40 unit complex in Port Coquitlam. Construction began in February/90 and we expect the first tenants to be settled in by Christmas/90.

Funding was received from the United Way of the Lower Mainland and the Vancouver Foundation to support a Community Social Planning proposal which was an outgrowth of SHARE's leadership in this area over the past two years. Staff were hired and community committees formed under SHARE's stewardship. SHARE's role with this group will change with the impending formation of a non-profit society, independent of SHARE, called the Social Development Council of District 43.

In the midst of all of the structural, financial and staff changes necessitated by this shifting mosaic of

funding and programs, two senior staff left for enhanced career opportunities. Maternity leave for another key staff person and the illness and unexpected death of yet another all served to contribute to an unsettled atmosphere.

A review of our program and service statistics indicate that we provided increased services throughout the year. A sample of these figures is as follows:

a) 13,959 telephone calls were received by trained volunteers at Lifeline - our 24 hour crisis line

b) 133 individuals or families were seen an average of three sessions each in counseling through the Volunteer Counseling program

c) 140 teens were assessed for suicide risk in 558 individual and family sessions. 29 educational presentations were made to a total of 1118 teens and adults.

d) Christmas Hamper Program - In Port Coquitlam and Port Moody there were 505 Hampers distributed, each worth approximately $70. Six hundred and ninety five adults and five hundred children were the beneficiaries.

e) Christmas Toy Program - 1820 toys were distributed to 364 children from 202 families.

f) Food Bank - 5139 food hampers worth approximately $165,000 were distributed to an average of 426 families (1140 people) per month

g) Thrift Store - 55,605 articles were sold to 24,134 customers for a gross income of $83,000. To obtain this number of "saleable" articles and to maintain a full stock in the store, the Thrift Store staff and dedicated volunteers had to sort through almost 150,000 donated items.

h) 1,240 tons (2,480,000 lbs.) of paper were picked up in our recycling program

i) 129 children and families were seen in our Speech and Language program for Pre-Schoolers. Services were provided not only in our own facility but also in four pre-schools in Port Moody, Port Coquitlam, Coquitlam and New Westminster.

j) over 400 individuals and families were seen in our counseling programs funded by the Ministries of Labour and Social Services and Housing

k) over 15,000 individual hours of child care were

provided through the Special Services to Children program

l) over 25 children were served in our 24 hour residential treatment programs

m) approximately 65 children in grades four to seven participated in school-based groups that focused on social skills.

n) 41 families participated weekly in two parent participation drop-ins

o) 85 families received short term support and counselling in their own homes with about 1/3 of these parents participating in further 8 to 12 week groups

p) there were three semesters of Family Life Programs during which approximately 25 parenting courses and 25 personal development courses were offered. Courses ranged in duration from one day or evening through to 8 weeks

q) 30 adolescents were served in a school based alternate program jointly operated by SHARE and District #43

r) 3 training programs were run for 25 employment disadvantaged adults

Staff and direct service volunteers are to be congratulated for the caring and professional way they have handled the always difficult demands of "helping".

The Board of Directors has again demonstrated excellent leadership. Some very difficult issues were raised, discussed and resolved, and other issues continue to be discussed. Priorities were established for future development, a progressive Employee Assistance Program was added to the agency benefits package, a new Board Manual was developed, fund raising continued to be a priority and Board members represented SHARE on a variety of community committees and at various functions.

Our thanks go out to all who have been involved with SHARE, in particular the hundreds of wonderful volunteers and the thousands of individuals, families, service clubs, churches, businesses and other organizations who donate food, money, clothing and other goods. Thanks also to Mayors Driscoll, Sekora, Traboulay and their Councils and staffs for continuing support and goodwill and to School District #43 Trustees and staff for our continuing partnership in some services and

community issues.

We would also like to thank our funding sources, The United Way of the Lower Mainland, Ministry of Health, Ministry of Labour, Ministry of Social Services and Housing, The Vancouver Foundation, the Ministry of the Attorney General and the Federal Department of Employment and Immigration.

Dale Christenson
Chairman

Alan Goard
Executive Director

THE CORPORATION OF THE
CITY OF PORT COQUITLAM

MEMORANDUM

TO: B.R. Kirk
City Administrator

DATE: January 16, 1991

FROM: C.F. (Kip) Gaudry, P. Eng.
Deputy City Engineer

SUBJECT: **BC HYDRO - "POWER SMART" ENERGY EFFICIENCY PROGRAM**
(Environmental Protection Committee, January 15, 1991)

Recommendation:

That Council give authority for a report to be prepared for their consideration, outlining the following:

a. A draft electrical energy efficiency policy,

b. A statement on the budgetary ramifications, if any, of the adoption of such a policy,

c. An implementation strategy for the policy, and

d. Any 1991 (or future) budget ramifications.

Background & Comments:

Municipal Governments, along with other BC Hydro consumers were asked in 1989 to support the utilities ten year energy efficiency program which would free up 2.4 billion kilowatt hours of electricity (enough energy to support a City the size of Greater Victoria). More efficiency energy usage, as opposed to building major new generation facilities, is not only environmentally acceptable, but also more cost effective.

The City of Port Coquitlam has been very conscious of hydro energy conservation over the past number of years. Some of our recreation facilities have been fitted with computer controlled energy conservation devices that over time will save the City considerable money. Energy Audits will be undertaken (some are done) of other Municipal buildings and will be part of the report back to Council.

Cont'd /2...

Report to Council Cont'd...

The energy audits are conducted by BC Hydro and Consultants at no cost to the City.

The Committee strongly supports the past efforts of the City in their energy conservation programs and encourages Council to approve this resolution.

Technical information on audits and other information on the Power Smart Program can be obtained from the Engineering Department.

C.F. (Kip) Gaudry, P. Eng.
Deputy City Engineer

CFG:gc

BC Hydro
Commercial Energy Management
1045 Howe Street
Vancouver, B.C. V6Z 2B1
(604) 663-3288

29 November 1990

FILE:

TO: ALL MUNICIPAL COUNCILS IN B.C.

Dear Members of Council:

RE: "Power Smart" Energy Efficiency Program

Municipal governments, along with all other B.C. Hydro consumers, were asked in March to support the utility's 10 year energy efficiency program, which should free up 2.4 billion kilowatt hours of electricity - enough to support Greater Victoria! More efficient energy usage, as opposed to building major new generation facilities, is not only environmentally acceptable but also more cost effective.

As part of this program, we have sponsored a Municipal Audit Program offering a free energy audit by B.C. Hydro staff for the municipal building of your choice. I am pleased to report that over 120 audits have been completed to date identifying savings of over 6.5 million kilowatt hours. This represents an average 15%-30% savings for the facilities audited! By the end of this program we hope to complete a sample audit for each municipality in Hydro's service area.

To demonstrate your support for the basic principles behind the better utilization of electrical energy, we are now asking all municipalities to adopt an electrical energy efficiency policy and an implementation strategy. To assist you in this respect, we are attaching a draft of such a policy, which your staff can review and recommend amendments to for your particular circumstances. We know you will find it cost beneficial in the long run to have such a policy.

Would the Council therefore consider adopting the following resolution in order to start this process within the next fiscal year:

> "THAT authority be given to prepare for the consideration of Council a report outlining the following:
>
> (a) a draft electrical energy efficiency policy,
> (b) a statement on the budgetary ramifications, if any, of the adoption of such a policy,
> (c) an implementation strategy for the policy, and
> (d) any 1990 draft budget requirements.

A regional BCH representative will shortly call upon your staff to see if you require any clarification or if we can provide further assistance. Thank you for your consideration.

Yours truly,

John P. Sheehan
Vice President, Customer Services

Enclosure

RH/cbk

POWER SMART

BC hydro
4940 Canada Way, Suite 201
Burnaby, B.C. V5G 4K6
Telephone:(604) 293-7777
Fax: (604) 293-7781

MUNICIPAL ENERGY EFFICIENCY POLICY

PURPOSE

Reducing the consumption of energy through wise energy management and introducing appropriate energy conservation technology without compromising occupant health and safety will lower operating costs and demonstrate our support for the responsible use of our natural resources.

POLICY

This Municipality is committed to considering the efficient use of electrical energy in the planning and operating of all of the facilities under its jurisdiction.

Each member of management is responsible for the energy efficient operation of his/her area of responsibility, and each employee has a vital role to play in supporting this policy.

To carry out this policy, the Municipality of _____ will:

1. Maintain an active and aggressive energy conservation awareness program among all employees.
2. Consider life cycle costs when purchasing new equipment and when undertaking major repairs to equipment. (That is, products and systems with superior efficiency, which will pay for their premium costs within half of their usable life, will be preferred).
3. Provide, within reason, the best available energy efficient systems.
4. Upgrade existing facilities and equipment to higher efficiency where the change offers a simple payback of five years.
5. Maintain equipment to energy efficient standards.
6. Maintain a continuous education program in energy efficiency procedures and practices.
7. Encourage all employees to suggest and initiate projects that will save energy.
8. Ask all employees to observe established energy conservation practices.
9. Monitor electrical consumption so that energy efficiency goals can be established and performance measured and reviewed annually.

PERFORMANCE STANDARDS

1. All new purchase orders specify:
   - high efficiency motors, transformers and air compressors.
   - adjustable speed drives for all fans and pumps where variable flows are required.
2. All buildings equipped with monitoring type controls to manage electrical use.
3. Lighting systems in new office buildings require no more than 5.0 kilowatt hours per square foot per year.
4. New office buildings operate on a total energy budget of no more than 18 kilowatt hours per square foot per year.
5. Natural gas, where available, is used for space and water heating.
6. All appliances meet the applicable BC Hydro efficiency rating.
7. Conversion where possible of:
   - 40 watt fluorescent tubes to 34 watt tubes.
   - ballasts to energy saving type.
   - incandescent lamps to compact fluorescents.
   - mercury vapor lighting to metal halide and high (or low) pressure sodium lighting.
8. Maintenance of equipment and of lighting undertaken to a level so as to achieve optimum efficiency of operation.

_____

SIGNED BY:

BC hydro
Lower Mainland Regional Marketing
FAX (604) 293-7781

22 October 1990

Mayor and Council
District of Port Coquitlam
2580 Shaughnessy St.
Port Coquitlam, BC
V3C 2A8

Your Worship and Council:

Over the past year, BC Hydro has been in contact with all the municipalities in our service area regarding Municipal Energy Efficiency. Our initial contact was a two-fold approach. The municipalities received a letter from John P. Sheehan, Vice-President of Customer Services explaining the Municipal Energy Efficiency Policy and asking that the policy be considered for adoption. We also offered each municipality a complimentary Municipal Energy audit of a municipal facility of your choise to demonstrate potential electrical energy savings. In your municipality, the Port Coquitlam Recreation Centre was audited and showed potential savings of $16,780 annually. We are currently following up your audit with Mr. Tom Jackson, Arena Supervisor to review what savings have been achieved to date.

When the results of your audit were presented to Council, the municipality was asked to adopt an Energy Efficiency Policy. To date over 50 municipalities have adopted the policy and the numbers continue to grow. These municipalities have recognized the need to have a consistent policy in place to ensure that all levels of their organization are committed to energy efficiency.

Enclosed with this letter is the Municipal Energy Efficiency Policy, typical of the statement being adopted by many B.C. Municipalities. It outlines the policy and performance standards we would like to see you adopt. BC Hydro will continue to work closely with your staff to make this policy easy to implement and adapt it to your needs.

We ask your Council to consider adoption of the Municipal Energy Efficiency Policy at your earliest convenience. Our Power Smart Marketing Representative, Doug Fraser at 293-7772 would be pleased to answer any questions you may have concerning this or other Power Smart information.

Yours truly,

G Lysyk

Mr. G. Lysyk
Area Manager
Lower Mainland North

Enclosure

A regional BCH representative will shortly call upon your staff to see if you require any clarification or if we can provide further assistance. Thank you for your consideration.

Yours truly,

John P. Sheehan
Vice President, Customer Services

Enclosure

RH/cbk

THE CORPORATION OF THE
CITY OF PORT COQUITLAM

MEMORANDUM

December 13th, 1990

TO: K. Gaudry
Deputy City Engineer

FROM: S. Rauh
Acting City Clerk

Re: "Power Smart" Energy Efficiency Program

With reference to a letter dated November 29, 1990 from John P. Sheehan and the attendance of Mr. D. Fraser of B.C.Hydro at the Council meeting, this will advise that when the same was considered at the regular Council meeting held on December 10th, 1990 the Council passed the following recommendation:

"That the B.C. Hydro "Power Smart" Energy Efficiency program policy be referred to the Environmental Protection Committee for further consideration and report."

S. Rauh
Acting City Clerk

KG I.Z. D.C.21

57/19

BC Hydro
Commercial Energy Management
1045 Howe Street
Vancouver, B.C. V6Z 2B1
(604) 663-3288

29 November 1989

FILE:

TO: ALL MUNICIPAL COUNCILS IN B.C.

Dear Members of Council:

RE: "Power Smart" Energy Efficiency Program

Municipal governments, along with all other B.C. Hydro consumers, were asked in March to support the utility's 10 year energy efficiency program, which should free up 2.4 billion kilowatt hours of electricity - enough to support Greater Victoria! More efficient energy usage, as opposed to building major new generation facilities, is not only environmentally acceptable but also more cost effective.

As part of this program, we have sponsored a Municipal Audit Program offering a free energy audit by B.C. Hydro staff for the municipal building of your choice. I am pleased to report that over 120 audits have been completed to date identifying savings of over 6.5 million kilowatt hours. This represents an average 15%-30% savings for the facilities audited! By the end of this program we hope to complete a sample audit for each municipality in Hydro's service area.

To demonstrate your support for the basic principles behind the better utilization of electrical energy, we are now asking all municipalities to adopt an electrical energy efficiency policy and an implementation strategy. To assist you in this respect, we are attaching a draft of such a policy, which your staff can review and recommend amendments to for your particular circumstances. We know you will find it cost beneficial in the long run to have such a policy.

Would the Council therefore consider adopting the following resolution in order to start this process within the next fiscal year:

"THAT authority be given to prepare for the consideration of Council a report outlining the following:

(a) a draft electrical energy efficiency policy,
(b) a statement on the budgetary ramifications, if any, of the adoption of such a policy,
(c) an implementation strategy for the policy, and
(d) any 1990 draft budget requirements.

A regional BCH representative will shortly call upon your staff to see if you require any clarification or if we can provide further assistance. Thank you for your consideration.

Yours truly,

John P. Sheehan
Vice President, Customer Services

Enclosure

RH/cbk

THE CORPORATION OF THE
CITY OF PORT COQUITLAM

M E M O R A N D U M

TO: Janna Taylor, Director
Parks and Recreation

DATE: October 24, 1990

FROM: Bryan R. Kirk
City Administrator

RE: B.C. Hydro Power Smart Report

Would you please review and comment on the attached report.

It will be presented to Council at its meeting of November 5, 1990.

Thank you.

/dp
Att.

POWER SMART

BC hydro
4940 Canada Way, Suite 201
Burnaby, B.C. V5G 4K6
Telephone:(604) 293-7777
Fax: (604) 293-7781

MUNICIPAL ENERGY EFFICIENCY POLICY

PURPOSE

Reducing the consumption of energy through wise energy management and introducing appropriate energy conservation technology without compromising occupant health and safety will lower operating costs and demonstrate our support for the responsible use of our natural resources.

POLICY

This Municipality is committed to considering the efficient use of electrical energy in the planning and operating of all of the facilities under its jurisdiction.

Each member of management is responsible for the energy efficient operation of his/her area of responsibility, and each employee has a vital role to play in supporting this policy.

To carry out this policy, the Municipality of _____ will:

1. Maintain an active and aggressive energy conservation awareness program among all employees.
2. Consider life cycle costs when purchasing new equipment and when undertaking major repairs to equipment. (That is, products and systems with superior efficiency, which will pay for their premium costs within half of their usable life, will be preferred).
3. Provide, within reason, the best available energy efficient systems.
4. Upgrade existing facilities and equipment to higher efficiency where the change offers a simple payback of five years.
5. Maintain equipment to energy efficient standards.
6. Maintain a continuous education program in energy efficiency procedures and practices.
7. Encourage all employees to suggest and initiate projects that will save energy.
8. Ask all employees to observe established energy conservation practices.
9. Monitor electrical consumption so that energy efficiency goals can be established and performance measured and reviewed annually.

PERFORMANCE STANDARDS

1. All new purchase orders specify:
   - high efficiency motors, transformers and air compressors.
   - adjustable speed drives for all fans and pumps where variable flows are required.
2. All buildings equipped with monitoring type controls to manage electrical use.
3. Lighting systems in new office buildings require no more than 5.0 kilowatt hours per square foot per year.
4. New office buildings operate on a total energy budget of no more than 18 kilowatt hours per square foot per year.
5. Natural gas, where available, is used for space and water heating.
6. All appliances meet the applicable BC Hydro efficiency rating.
7. Conversion where possible of:
   - 40 watt fluorescent tubes to 34 watt tubes.
   - ballasts to energy saving type.
   - incandescent lamps to compact fluorescents.
   - mercury vapor lighting to metal halide and high (or low) pressure sodium lighting.
8. Maintenance of equipment and of lighting undertaken to a level so as to achieve optimum efficiency of operation.

_____

SIGNED BY:

BC hydro
Commercial Energy Management
1045 Howe Street
Vancouver, B.C. V6Z 2B1
(604) 663-3288

29 November 1989

FILE:

TO: ALL MUNICIPAL COUNCILS IN B.C.

Dear Members of Council:

RE: "Power Smart" Energy Efficiency Program

Municipal governments, along with all other B.C. Hydro consumers, were asked in March to support the utility's 10 year energy efficiency program, which should free up 2.4 billion kilowatt hours of electricity - enough to support Greater Victoria! More efficient energy usage, as opposed to building major new generation facilities, is not only environmentally acceptable but also more cost effective.

As part of this program, we have sponsored a Municipal Audit Program offering a free energy audit by B.C. Hydro staff for the municipal building of your choice. I am pleased to report that over 120 audits have been completed to date identifying savings of over 6.5 million kilowatt hours. This represents an average 15%-30% savings for the facilities audited! By the end of this program we hope to complete a sample audit for each municipality in Hydro's service area.

To demonstrate your support for the basic principles behind the better utilization of electrical energy, we are now asking all municipalities to adopt an electrical energy efficiency policy and an implementation strategy. To assist you in this respect, we are attaching a draft of such a policy, which your staff can review and recommend amendments to for your particular circumstances. We know you will find it cost beneficial in the long run to have such a policy.

Would the Council therefore consider adopting the following resolution in order to start this process within the next fiscal year:

"THAT authority be given to prepare for the consideration of Council a report outlining the following:

(a) a draft electrical energy efficiency policy,
(b) a statement on the budgetary ramifications, if any, of the adoption of such a policy,
(c) an implementation strategy for the policy, and
(d) any 1990 draft budget requirements.

A regional BCH representative will shortly call upon your staff to see if you require any clarification or if we can provide further assistance. Thank you for your consideration.

Yours truly,

John P. Sheehan
Vice President, Customer Services

Enclosure

RH/cbk

Walk-Through Energy Audit Report

for the

CITY OF PORT COQUITLAM

Port Coquitlam Recreation Centre

Conducted by

Mr. Ray Denby (B.C. Hydro)
Mr. Tom Knox (Enerdata Systems Ltd.)

May, 1990

File Number: 89-17

B. C. Hydro

MUNICIPAL ENERGY EFFICIENCY PROGRAM

TABLE OF CONTENTS

APPENDIX A
Electrical and Gas History Printouts

APPENDIX B
Lighting: Operating Hours Data

APPENDIX C
Lighting: General Savings Table

APPENDIX D
Motors: Energy Efficient Conversion Savings

The following summary lists energy conservation measures applicable to the Port Coquitlam Recreation Centre and generally considered to have a good payback. Electrical savings have been estimated for most measures, but consideration should be given to all recommendations. Details of savings are contained in the report text.

SUMMARY OF SAVINGS

ACTION	Annual Potential $ Savings	Annual kWh Savings
Electrical		
Correct and Monitor Power Factor	900	
Start-up/Shut-down of Ice Compressors re Billing	1,200	24,000
Delamping Luminaires - General	980	19,600
Reducing Operating Hours - Cafe	120	2,400
Reducing Operating Hours - Auditoriums	190	3,800
Reducing Operating Hours - Arena #1 Ice Surface	1,750	35,000
Reducing Operating Hours - Arena #2 Ice Surface	2,090	41,800
Reducing Operating Hours - Mabbot Room	730	14,600
Reducing Operating Hours - Mabbot Rm (Kitchen)	40	800
Replace Existing Fluorescent Lamps - 4 foot Fluorescents	1,290	25,800
Replace Existing Fluorescent Lamps - 8 foot Fluorescents	45	900
Replace Incandescents with Compact Fluorescents	385	7,700
Replace Metal Halide Ice Lighting with HPS	1,285	25,700
Convert Mercury Vapour to High Pressure Sodium	2,120	42,400
Energy-Efficient Fluorescent Ballast Savings	925	18,500
Exit Light Conversion	160	3,200
Place Outdoor Incandescents on Timer or Photocell	80	1,600
Install Occupancy Sensors - Dressing Rooms	130	2,600
Install Energy-Efficient Motors	2,360	47,200
TOTAL SAVINGS	**$16,780**	**317,600**
kWh Consumption		2,115,545
PER-CENT kWh SAVINGS		**15%**

SUMMARY OF SAVINGS

Natural Gas	
Reduced Flow Shower Head Savings - (Each)	$ 31
Lower Water Temperature in the Ice Cleaning Machine	$810
Reduce Quantity of Ice Flood Water	$810
TOTAL NATURAL GAS SAVINGS	$1,650

Other	
Monitor Demand Usage	*
Zoning for Varying Lighting Levels	*
Removing One Lamp From a Two-Lamp Fixture	*
Replace 'Egg-Crate' Fixture Diffusers	*
Clean Luminaires	*
Improving Lighting Efficiency with Paint	*
Group Relamping	**
Investigate Staging of Compressors	*
Summer Operation of Brine Pumps (Costing)	*
Weatherstripping and Caulking	*
Shutting Off Gas Radiant Heaters	**
Low Emissivity Ceilings	*
Check and Clean Filters	*
Monitoring Energy Data	*
Tracking Maintenance Data	

* = Documented in this report, no calculations done. Generally Considered A Cost-Effective Measure
** = Documented in this report, no calculations done. Please read section for further details

INTRODUCTION

Energy Management Program Components

An energy management program for a building usually involves three different steps: bill analysis; a 'walk-through' energy audit; then a detailed audit (collection of equipment and operation details and calculation of possible savings in areas). Steps should be done in this order.

Bill analysis will determine potential savings as a result of a conservation program and (as an ongoing yearly measure) will verify those savings. The 'walk-through' is a quick review of energy use in a building (do this every few years), and thirdly, a detailed audit may be done, when and if indicated by the previous two steps.

Some collection of equipment and operation details are part of an initial walk-through audit.

The Walk-Through Energy Audit

An energy audit is an important and necessary step in setting up an energy management program. A complete audit involves the compiling of historical energy use data; a detailed analysis of the building and all equipment, their hours and method of operation; and evaluating and making recommendations based on the previous steps. A walk-through audit covers the same items as a complete audit, but in less detail. Equipment is often not itemized in detail and complicated evaluations (eg. heat recovery from exhaust) are not included in a walk-through audit.

The walk-through audit provides an overview of general energy use and recommends common and cost-effective conservation steps. It will point the way to measures requiring more investigation or simply note that there are no probable further measures for a building. A walk-through is usually a first step to determine if a more detailed energy study is likely to be cost-effective.

Building Description

The Port Coquitlam Recreation Centre is a multi-use building with two ice sheets (operating in winter only), a Seniors Centre with a Pottery room, Pool tables, Cafe, and General Purpose rooms. Hours of operation for the ice surfaces vary from approximately

140 to 126 hours/week in the winter to 75 hours/week in the summer. The remainder of the area(s) operate about 10 to 16 hours/day, year round.

Lighting varies from recently reballasted Mercury Vapour fixtures (Ice #2); Metal Halide (Ice #1); Incandescent (mostly in the Seniors section); and standard F40 fluorescents (throughout).

Heating is largely by natural gas, with natural gas radiant heaters in the Ice area, and gas forced air in other areas. There is some electric heat in both the recreation centre area and the arenas.

Hot Water is electrically heated for the Recreation section (the new section has gas) and there is a heat reclaim system from the compressors. The facility typically runs out of hot water when the 'old-timers' play and during tournaments.

Total energy cost for 1989:
Electrical **$86,950.00** (2,068,800 kWh) Natural Gas **$11,460.00** (2,710 GJ)

Correct and Monitor Power Factor

Where power factor is recorded for a building it is a very important item in energy use. Because certain types of equipment use energy not recorded at the normal kWh meter, another factor is taken into account and noted on your bill as power factor. The higher this factor the better. To avoid penalties, it must be 90% or greater. Correcting a low power factor to at least 90% usually has a very short payback (1 to 2 years). The solution can even be as simple as replacing a blown fuse in an existing capacitor.

Your billing record indicates you are currently paying a penalty for poor power factor in the **summer months.** Correcting to 90% or better would result in a dollar **savings (annually) of $900.00** per year. Because the problem is in the summer months only (although power factor is only about 91% for the winter months), we suspect the problem is in the air-conditioning equipment. Correcting at the transformer (primary side) could be a cost effective approach.

Even if the problem is corrected, we encourage you to regularly watch your power factor readings in all municipal buildings and take immediate action if it falls below 90%. If maintenance personnel do not see the bills regularly, consider training the person who pays the bill each month to watch out for penalties and power factor below (or approaching) 90%.

-Monitor Demand Usage

Demand use and charges can be a very important part of some municipal buildings energy use, while in others it is not a major concern.

Since your demand is over 150 kW for any billing period, you pay $6.19 for every 1,000 Watts (1 kW) you use, even if this use is only for about 1/2 hour in that billing period. Note there is also a minimum demand charge on accounts that have a large demand for most, but not all, months.

As with power factor, we encourage you to watch your demand recordings, note any significant changes, and attempt to determine if any significant increase can be avoided in the future.

Start-up/Shut-down of Ice Compressors re Billing

When the ice-making compressors run, they have a significant impact on the demand charges paid that month.

Whenever possible, ensure that compressors are not started up one or two days before the beginning of a new building period. In that case you would then be billed for the entire demand charge but only have had the use of the equipment for a few days that billing period. Demand is calculated on a 1/2-hour window in the billing period.

It cannot be predicted exactly what day your meters will be read by B. C. Hydro, but examining your bills for the arena will show typical reading dates. This will usually be fairly consistent. Being aware of the costs could make it worth planning to avoid these demand charges. For example, since your meters are typically read around the 22nd to the 27th of each month, try to plan so the ice will not be put in a few days before the 22nd, avoiding compressor start-up. Similarly, consider the date the ice is taken out and the scheduling of compressor maintenance in the summer, and the potential effect on your bill. Note (eg.) May 26/88 reading date where demand was 456 kW (normal winter demand) but kWh use per day was only 3,600 (about half of winter consumption). A similar situation was noted in the August 24/89 reading date. These readings indicate the compressors are being started up (and/or shut down) about half way through the billing period, incurring al the demand but using relatively little energy. See **APPENDIX A** for details.

If 200 kW of demand charges are avoided (difference between summer and winter demand) for one billing period in a year and considering applicable minimum demand charges, you will **save $1,200.00 per year** (@ 5 cents/kWh).

LIGHTING

Note that savings are calculated in a specific order. The most cost-effective step is usually delamping. Second is reducing the hours of use for the remaining lamps. Thirdly, savings from any conversions (eg. to energy-efficient fluorescent tubes) are calculated using:
1. remaining lamps at **2.** reduced hours.

If any preceding step is not done, savings will be greater for the latter steps.

See **APPENDIX B** - LIGHTING: OPERATING HOURS DATA and
APPENDIX C - LIGHTING: GENERAL SAVINGS TABLE for details.

INDOORS

The following topics are intended as a general background for specific areas (in the Port Coquitlam Recreation Centre) that have potential lighting energy savings. The principle is the same for savings in areas not covered in this report.

Zoning for Varying Lighting Levels

Zoning an office for varying lighting levels means the level of illumination for a particular area can be specific to the task performed in that area to potentially save energy and maintenance costs. This is similar to the principle of providing task lighting for a desk but applied over a wider area. Zoning gives potential savings in energy and maintenance costs. Examples of zones that could be established for various light levels are customer service areas, halls, drafting or accounting offices, and perimeter areas that have a high contribution of natural daylight. Control of lighting in the zoned area can be achieved in a number of ways: manual or photocell controlled switching; timers; automatic dimming switches; or any combination of the above.

DELAMPING

Delamping Luminaires - General

Delamping areas that are "over-lit" for a particular use offers one of the easiest and least expensive ways to reduce electrical energy operating costs. In many buildings luminaires are placed in a standard grid pattern without regard to eventual use of the area. This results

in some areas being "over-lit" for the work tasks performed. Delamping not only saves energy, but also reduces lighting maintenance costs as there are less luminaires to service.

Delamping 44 fluorescent luminaires (@ 2 lamps per fixture) in various areas of the Recreation Centre will result in **savings of $980.00 per year** (@ 5 cents/kWh).

Delamped luminaires should be identified (eg. a red or blue sticker) so that they are not re-energized in error during future lighting maintenance work. Please see the following table for recommended areas and fixtures to delamp.

Delamping Recommendations

Location	# of Fixtures To Delamp
Mabbot Rm	8
Auditorium/1	4
Auditorium/2	4
Lobby	4
Pottery Room	4
Pool Tbl Rm	3
Cafe	2
Foreman	2
Hallway	2
Kitchen	2
Concession	1
Dressing Rm	1
Entrance	1
Hall/stair	1
Lunch Rm	1
Mtg. Rm #1	1
Mtg. Rm #2	1
Storage	1
Workshop	1

Removing One Lamp From a Two-Lamp Fixture

Savings from delamping do not have to involve removing two tubes in a fixture. While this is normally the situation since two lamps are required (plus the ballast) to complete the circuit, you can use a "phantom" tube to allow the remaining lamp to operate at reduced light output. These tubes look like fluorescent lamps, but give no light. Since their only function is to complete the circuit, they have an indefinite lifespan. The combination of one standard lamp and a phantom tube results in an energy savings and corresponding light

level reduction of 66%. This option is applicable to various areas in the Recreation Centre. and with a little consideration, you may find additional areas where savings are possible through delamping one lamps only from either a two or four lamp fixture. One caution to note is the possibility of large installations of phantom tubes lowering power factor.

REDUCING OPERATING HOURS

Probably the simplest and least expensive method of saving energy used in lighting is to shut off the lights when not needed. From our initial investigation, it would appear there is good potential for reducing the hours of use in the Recreation Centre by switching off lights when the area is not occupied.

Switching Off Fluorescent Lamps

Contrary to a popular belief, improvements in fluorescent lamps and ballasts, along with higher costs for electricity means it pays to switch off fluorescent lights when you leave a room for more than five minutes.

The following savings are available by reducing operating hours in various areas in the Recreation Centre. All numbers given are those after delamping.

Reducing Operating Hours - Cafe

In the Cafe, if the 11 - F40 Fluorescent fixtures can have the operating hours reduced by 40 hours/wk, **savings would be $120.00 per year.** This would also mean 2,000 fewer operating hours for the lamps each year.

Reducing Operating Hours - Auditoriums

In the Auditoriums, reducing the operating hours of the 28 - F40 fixtures (each Auditorium) by 14 hours per week, **savings would be $190.00 per year.**

Reducing Operating Hours - Arena #1 Ice Surface

Reducing the operating hours of the 40 - 400 Watt Metal Halide fixtures in Arena #1 by 40 hours/week (winter) and by 30 hours/week in summer (currently estimated at 75 hours/week in summer), will give **savings of $1,750.00 per year.**

Reducing Operating Hours - Arena #2 Ice Surface

Reducing the operating hours of the 66 - 400 Watt Mercury Vapour fixtures in Arena #2 by 26 hours/week (winter) and by 30 hours/week in summer (currently estimated at 75 hours/week in summer), will give **savings of $2,090.00 per year.**

Reducing Operating Hours - Mabbot Room

Reducing the operating hours of the lighting in the Mabbot Room by an average of 4 hours/day, 7 days per week, will give **savings of $730.00 per year.**

Reducing Operating Hours - Mabbot Rm (Kitchen)

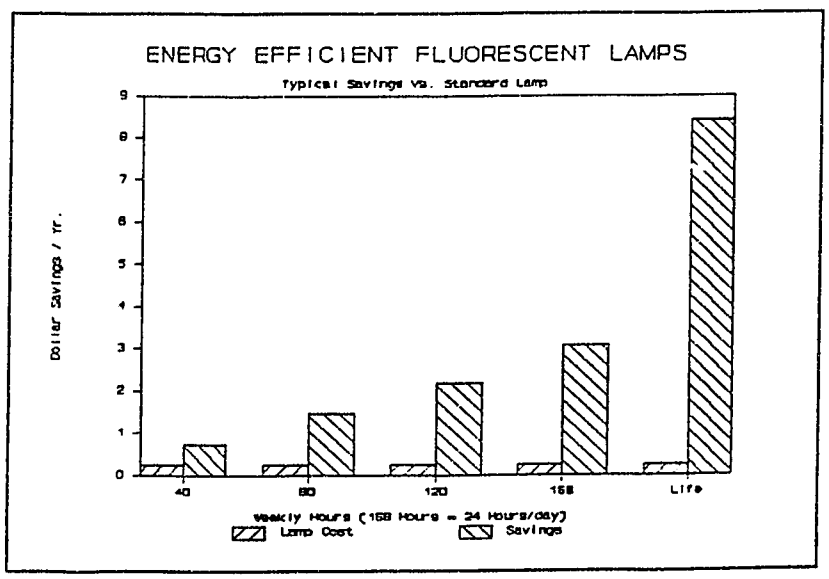
Reducing the operating hours of the lighting in the Mabbot Room by an average of 6 hours/day, 7 days per week will give **savings of $40.00 per year.**

FLUORESCENT LAMP CONVERSIONS

Energy Efficient Fluorescent Lamps

An Energy Efficient (4 foot) fluorescent lamp uses 7 Watts less than a standard fluorescent lamp, with only a slight decrease in light output. Energy Efficient lamps are available to replace all popular sizes of standard lamps.

The longer the hours of operation, the greater the energy savings, and the faster the payback on possible premiums paid for the energy saving lamp. Each 4-foot energy saving fluorescent lamp



typically saves $8 to $10 (based on 5 cents per kWh) over its life. The graph illustrates cost versus yearly savings for an energy efficient lamp operating at various hours. The last example shows the typical proportion of cost versus savings, over a lamp life of 24,000 hour..

Replace Existing Fluorescent Lamps - 4 foot Fluorescents

We have calculated the approximate savings for the (approximate) 492 fixtures (2 lamps per fixture, including ballast) in the building (at various operating hours).

If you replace these lamps with reduced wattage 34 Watt fluorescents, you will save **$1,290.00 per year.**

Replace Existing Fluorescent Lamps - 8 foot Fluorescents

Replacing the lamps in the 4 - 8 foot fluorescent fixtures in the Compressor Room (@ 140 hours/wk operation) with energy efficient lamps will **save $45.00 per year.**

Power Smart: EE Lamp Rebate Program

To introduce you to the benefits of Energy Efficient Fluorescent lamps, BC Hydro has introduced a new Power Smart Energy Efficient Fluorescent Lamp Rebate Program designed to contribute towards the higher initial cost of the Energy Efficient Fluorescent lamp. B.C. Hydro will rebate you 25 cents per 4 foot lamp when it replaces a 40 watt 'standard' fluorescent. Other rebates under this program are as follows:

25 cents/lamp - a 25 Watt (EE) lamp replacing a standard 30 Watt
50 cents/lamp - a 60 Watt (EE) lamp replacing a standard 75 Watt
50 cents/lamp - a 95 Watt (EE) lamp replacing a standard 110 Watt

Please contact our local office for further information or application forms.

OTHER CONVERSIONS

Replace Incandescents with Compact Fluorescents

Incandescent lighting in the building could be replaced with more efficient ompact Fluorescent' lamps. These lamps can directly replace incandescents in the 25 t 00 Watt size and using the existing socket. With an estimated life of more than 10,000 h rs, these lamps will last 10 times longer than 'standard' incandescents and twice as long as the 'Extended service' type (light output will be greater if replacing extended service types). The extended life can mean drastically reduced maintenance hours. Replacing the existing incandescents with Compact Fluorescents will give **savings of $385.00 per year.**

Compact fluorescents are not recommended for cold environments and currently, most operate with a power factor below 90% (conversion of large number of incandescents to Compact Fluorescent **may** lower your overall building power factor).

For standard incandescent bulbs, the general replacements are as follows:

Incandescent	Compact Fluorescent
100 Watt	18 Watt (26 Watts with Ballast)
60 Watt	13 Watt (16 Watts with Ballast)
40 Watt	9 Watt (10 Watts with Ballast)

Replace Metal Halide Ice Lighting with HPS

The existing lighting for the ice surface (Arena #1) is provided by 400 Watt Metal halide lights. Replacing these with High-Pressure Sodium lamps (HPS) will save energy, with slightly lower lighting levels (about 5%). Costs for replacement of the lamps will also be slightly less, since the HPS lamps have a life span about 20% greater than the existing lamps.

If the 40 - 400 Watt Metal Halide lamps are replaced with 250 Watt HPS fixtures (operating 100 Hours/week), the result will be savings of **$1,100.00** (@ 5 cents/kWh) for the winter months. In summer months savings will be **$185.00** (@ 45 hours/wk). Total **savings for converting the Metal Halide fixtures to HPS will be $1,285.00 per year.**

There is one item to consider when replacing the metal halide with HPS and that is television or video productions of ice events. HPS lighting gives relatively poor images for TV or video, except for newer and relatively short-lived colour improved types. One possible alternative would be to leave some of the existing fixtures in place and use them when required for such events. Since video productions are usually a very small percentage of total ice-time, the other advantages of HPS lighting should be carefully considered.

- Convert Mercury Vapour to High Pressure Sodium

Lighting in Arena #2 of the Recreation Centre is provided by Mercury Vapour luminaires, recently reballasted and relamped (Summer, 1989). While conversion to an efficient High Pressure Sodium fixture is not likely to be cost-effective now that you have new ballasts in place, we have costed out savings from this measure to give you an idea of expected kWh savings possible from typical conversions.As you are aware, the HPS lighting renders colour differently than Mercury Vapour or Metal Halide, but this is generally a consideration only where colour matching is critical.

For 66 - 400 Watt Mercury Vapour lamps converted to 250 Watt HPS lamps (@ 100 hours/week for 38 weeks/year and 5 cents/kWh), savings of **$1,820.00 per year** are achievable. This option will result in improved lighting levels. The above savings are for the winter months. In summer months savings by this conversion (operating 45 hours/wk.) will be **$300.00 per year.** Both figures assume reduced hours are already implemented. Total **savings will be $2,120.00 per year.**

Use Energy-Efficient Fluorescent Ballasts

When purchasing new or replacement fluorescent ballasts consider the advantages of new energy saving ballasts. These new ballasts offer potential energy savings in the order of 10% to 20% over standard ballast designs. Energy-efficient ballasts operate cooler and as a result offer longer ballast life. Choose the ballast type most suitable to your application. Different ballasts offer different features:

1) **Energy Efficient Magnetic core ballasts** are similar to standard ballasts, but are made from better quality materials. This results in lower losses, reduced heat generation, improved electrical performance, higher efficiency and, often, extended life. A luminaire with an energy efficient magnetic ballast saves 10 watts per hour compared to the same luminaire with a standard ballast.

2) **Electronic Ballasts** use solid-state technology to perform traditional ballast functions and are the most efficient ballasts on the market today. Benefits include longer life - up to two times that of standard ballasts and higher efficiency. A luminaire with an electronic ballast saves 23 watts compared to the same luminaire with a standard ballast.

3) **Multi-level energy efficient ballasts** allow the light output to be switched from high to low mode. These ballasts give you reduced energy costs without having to resort to delamping. With thought, you can use them to create a versatile and efficient lighting system. On high mode, the lamp gives 100% of light output. The low mode gives a 40% savings in energy consumption with corresponding 40% reduction in light output. Although the average cost of a multi-level ballast is twice that of a standard ballast, the low mode power savings will usually payback this investment in a few years.

Energy-Efficient Fluorescent Ballast Savings

For all ballasts (F40 or F34 lamps) converted to energy-efficient ballasts (core/coil type at 10 watts/ballast), **savings would be approximately $925.00 per year.**

Replace 'Egg-Crate' Fixture Diffusers

Without something to diffuse or spread out light from fluorescent lamps there would be significant glare, resulting in discomfort for occupants. Devices to reduce the glare are commonly known as diffuser covers and placed below the lamps.

While these diffusers are necessary to reduce glare they also reduce light output since they absorb some of the light passing through them. Some diffusers absorb less light than others and therefore result in a more efficient lighting system. Fixtures in the pottery room have what are called 'egg-crate' diffusers, since they look something like an egg-crate. For the degree of glare control they provide, they are relatively inefficient (30 -35% less efficient) compared to a plastic or glass prismatic diffuser. Egg-crate diffusers are best suited to areas where extreme dirt build-up is a problem.

Exit Light Conversion

Exit lights must be illuminated 24 hours a day, 365 days a year. So converting exit sign lighting from incandescent lamps to compact fluorescent lamps can give you significant energy savings because compact fluorescents use up to 80 per cent less energy than incandescents.

Compact fluorescent lamps last longer: 10,000 to 15,000 hours, or about two years in continuous service, compared to 1,000 hours for standard incandescent lamps. That means less frequent lamp replacement and lower energy costs.

A typical exit sign with 2-20 watt incandescent lamps retrofitted with two-5 watt compact fluorescent lamps will save $12.25 per sign in energy costs alone.

Converting the 13 incandescent Exit Lights in your Recreation Centre could **save you $160.00 per year.**

Power Smart: EE Ballast Rebate Program

To make the conversion to EE Ballasts even more attractive, B. C. Hydro is now offering an Energy Efficient (EE) **Ballast Rebate** to contribute toward the higher initial cost of an Energy Efficient Ballast. **B.C. Hydro will rebate $1.00 for every EE Ballast** replacing a standard ballast. There are also rebates available to encourage the purchase of electronic EE Ballasts under the Custom Option rebate.

Please contact our Ray Denby at 293-7780 or our local office for further information or application forms.

Power Smart: HID EE Lighting Rebate Program

To make the conversion to Energy Efficient HID lighting (Metal Halide or High Pressure Sodium) even more attractive, B. C. Hydro is now offering an **HID Lighting Rebate** to contribute toward the initial cost of your conversion to 100 Watt and up HID luminaires. **B.C. Hydro will rebate $500.00/kW of energy saved** up to 50% of the cost of the new luminaires.

Please contact our local office for further information or application forms.

OTHER LIGHTING IMPROVEMENTS

Clean Luminaires

The efficiency of your lighting system can be improved by adopting a regular cleaning procedure. Dirt on these fixtures can reduce light levels by 10 to 15% or more and cleaning is important in maintaining light levels and ensuring you get all the light you are paying for. This may be particularly important and applicable considering energy-efficient lamps reduce light output slightly.

If all lamps are replaced in one operation to reduce labour time (group relamping), this is an ideal time for cleaning. Be sure to use a **non-static, non-bleach** cleaner (or dirt and yellowing may increase).

Improving Lighting Efficiency with Paint

It is well-known that white or light colours reflect more light than darker colours but the effect of colour on lighting system efficiency is not as well known. As an example, to provide equivalent light levels, it would require 15% more luminaires in a room with medium reflectance values - ceiling 50% and walls 30% - compared with a room with good reflectance values - ceiling 80% and walls 50%. White, off-white or light pastel colours have a 60 - 90% reflectance value while dark tan/light brown will be more like a 30% reflectance value.

This does not mean everything should be painted white, and in fact excessive glare can result from glossy painted surfaces. However, you should plan with the idea of providing significant areas of bright or light colours in a room to minimize the electrical lighting loads.

The Arena Lobby is one specific area where reflectance values appear to be fairly low, although this recommendation should be considered in all your buildings when renovating, redecorating or constructing.

Group Relamping

In 1989 you replaced the lamps in Arena #2 (along with the ballasts) as a 'group relamp'. We recommend you implement group relamping on your major lighting systems. Group relamping means all lamps in an area are replaced at specific time intervals, even if they still work. While it may seem wasteful, savings are generated in a number of ways:

Overall labour costs are reduced since set-up and travel time is much smaller proportionately than individual (spot) replacement (estimates for reduced labour costs from this method are from 80 to 90%);

Work interruptions caused by individual replacement are lessened (relamping can be done during non-operating hours), and;

The actual number of lamps needed may be reduced by as much as 15% since average system light output will be higher with lamps replaced before the end of their rated life. As lamps age, their light output decreases (by the end of their rated life often dropping 25% from initially installed levels).

There are a number of factors that influence the most economic relamping schedule. If you have questions we recommend you contact a qualified lighting maintenance contractor or your lamp supplier who have computer programs available to determine the most economical group relamping schedule for your facility.

OUTDOOR DECORATIVE/BUILDING SECURITY LIGHTING

Place Outdoor Incandescents on Timer or Photocell

Automatic switching controls could reduce your outdoor incandescent lighting operating hours (outside the North door by Arena 2) when not required. Annual **savings of $80.00 per year** (@ 5 cents/kWh) would result if the 6 - 60 Watt incandescents were shut off during the daylight hours. In addition, the life of the lamps would also be extended by the number of hours they are shut off.

AUTOMATIC CONTROLS

Install Occupancy Sensor - Dressing Rooms

In areas that are used seldom, and then only for brief periods of time (such as the Dressing Rooms), lights are often on, but used relatively little. Because the area may be unoccupied for long periods of time, the lights may be on for many hours before someone notices. An ideal control for this situation is an occupancy sensor. These sensors automatically turn on the lights when someone enters the area, and turn them off again when no movement is detected, after the person has left.

Consider an occupancy sensor to reduce the hours of operation in Dressing Rooms 1 to 4 by 90 hours per week in each room (current operating hours for Rooms 1 and 2 are estimated at 140 hours/wk., and Rooms 3 and 4 @ 126 hours/week). **Savings will be $130.00 per year** (@ 5 cents/kWh).

MOTORS

Install Energy-Efficient Motors

High-efficiency (HE) electric motors offer a long-term solution to reducing energy costs. HE motors deliver the same output as a standard motor but consume up to 10% less energy. Since an electric motor uses four to eight times its purchase price in energy every year, the premium paid for the HE motor is a good investment.

We have costed savings from converting a number of standard efficiency motors to High-Efficiency motors and using various operating hours/week. Annual **savings from motor conversion would be approximately $2,360.00 per year.** See **APPENDIX D** - ENERGY EFFICIENT MOTOR CONVERSION SAVINGS for details.

Power Smart: High-Efficiency Motors

The High-Efficiency Motor Program is a reward for being more efficient. The greater the efficiency of the motor you install (compared to an industry 'standard' motor), the greater your rebate. You get $400 for every kilowatt saved, up to a maximum 20% of the cost of the motor.

For example, a standard 100 h.p. motor with an efficiency rating of 90.7% replaced with an energy-efficient motor with a rating of 93% will earn you the minimum rebate of $800. A new motor with a rating of 93.8% will give you a rebate of $1,087. And you start saving on energy costs right away.

Please contact Ray Denby or our local office for further information or application forms.

Investigate Staging of Compressors

The compressors are apparently not set up where one will operate until the load cannot be met, then another starts. This can impact on your demand charges and give relatively poor performance for your system re electrical efficiency. Consider staging these compressors to reduce your costs and reduce the start/stop cycling on the motors.

- **Summer Operation of Brine Pumps** (Costing)

During the course of the audit it was mentioned you are considering running the brine pumps continuously throughout the summer. We would like to point out the energy costs associated with this measure.

With two brine pumps (one at 25 H.P. and one at 20 H.P.) operating 24 hours/day, 14 weeks/year (summer) and 5 cents/kWh, the approximate **cost of operation will be $4,000 - $4,500 for the summer.** Please consider other methods of avoiding the problem (eg. manual cleaning of the nozzles, flushing, etc.) and their costs before implementing this measure. You have suggested the actual summer 'down' time may be closer to 5 months or 20 weeks. This would give a cost of 20/14 x $4,000 = $5,700.00

DOMESTIC HOT WATER

All natural gas hot water savings are calculated assuming $4.21 for one Gigajoule of Natural Gas, and a system efficiency (delivered to the end use) of 63%. While you have heat recovery on your hot water systems, savings are valid as the load that cannot be met by the recovery system are met by the natural gas heating system. Since you consistently run out of hot water the measures indicated following may in fact not save the dollars indicated but instead give you more hot water.

Reduced Flow Shower Head Savings - (Each)

The shower heads in the Centre are the typical head type with a flow rate of around 0.4 litres per second. Reduced flow shower heads have a flow rate of around 0.16 litres per second, and with quality heads made by the major manufacturers it is difficult or impossible to tell the difference between the two flows.

Cost of a shower head should be around $10.00 - $20.00 and **savings of $31.00 per year** will be realised (based on use of 15 minutes/day, 7 days/wk., 38 wks/yr. and water temperature of 42 Deg.C).

Note this number is an estimate only and if use is 20 minutes per day (average), savings will be 33% higher.

-Lower Water Temperature in the Ice Cleaning Machine

The temperature of the water used to flood the ice is approximately 60 Degrees C. (140 Degrees F). Reducing this temperature by 10 Degrees C. will result in **savings of $810.00 per year** in hot water heating costs (@ 450 Litres per flood, 24 floods/day, 38 weeks/year. Lower temperatures can give a good flood, but this measure should certainly be sampled in a number of months with varying outside temperatures. The lower temperature may not be satisfactory in extremely cold winter months, but be perfectly acceptable for most other times of the year. Lower flood water temperatures may even be better than high temperatures if fogging is a problem in the arena, since there is less evaporation at lower temperatures. Moreover, lower water temperature also reduces the load on refrigeration compressors.

Reduce Quantity of Ice Flood Water

The ice-resurfacing machine typically returns from floods with water left in the machines' tank. This water then cools off before the next flooding. We have calculated the amount of savings if you can reduce this water 'over-fill' by 90 Litres per flood (20 Imperial Gallons). If water is used at 60 Degrees C., and cools to approximately 10 Degrees C., **savings of $810.00 per year**, can be realised in reduced water heating costs.

BUILDING ENVELOPE

Weatherstripping and Caulking

Weatherstripping is an important part of a building's energy conservation program. As a piece of equipment, it wears out fairly quickly, particularly where the door or window gets a lot of use. Door weatherstripping in a building like this may need to be replaced as often as every year. Weatherstripping should at least be checked every year, and replaced as necessary.

WEATHERSTRIPPING SUMMARY

The following door weatherstripping conditions were noted in the weatherstripping review:

Location	CONDITION		
	Sides	Top	Bottom
Pottery Room	none	none	none
Front Door	poor	okay	poor
Meeting Room	good	good	good
Smoking Room	good	good	good
Cafe (West)	good	good	good
Pool Room	good	good	good
Seniors Door (South West)	poor	okay	poor

Weatherstripping on the compression (hinge) side of doors and windows should be placed on the door frame itself, not on the 'face' as the other three sides.

Shutting Off Gas Radiant Heaters

Consider putting the gas radiant heaters in the arena on a timer. They apparently operate from 1 p.m. to 8 p.m. unnecessarily. Savings were not costed out for this measure but implementation could be done manually and savings could be significant.

Low Emissivity Ceilings

We have included this brief discussion of a recent (in the past five years) option arenas have installed, known as a low emissivity ceiling (LEC). Although the ceiling is usually installed in an attempt to correct a specific problem, it has been found the LEC is useful in improving many other aspects of arenas. These ceilings help in reducing heat radiation from the ceiling, eliminating obvious problems like fogging on sunny days. Less obvious are other benefits which have been noticed: pick-up times to bring the brine down to normal temperatures have been reduced by 50% (possible savings from allowing the temperature to rise at night); dripping condensation from the ceiling is eliminated; and illumination levels are improved (possible savings from reducing lights). Even without considering potential lighting savings, electrical use in refrigeration has been reduced by as much as 22%. One item to review before installation of an LEC is the present condition of the roof structure, and any problems in this area must be corrected before considering an LEC. Typical installed Low Emissivity Ceiling costs are around $30,000.

MECHANICAL SYSTEM MAINTENANCE

Check and Clean Filters (Heating, Ventilating and Air Conditioning Systems)

The filters in the HVAC system should be checked and cleaned regularly. To determine how often would be optimum, have them checked regularly once a month for about a year, then decide on the frequency of cleaning required for this building. Dirty filters reduce the amount of heated air that can flow to the various areas in the building, ultimately requiring the heating system to run longer to provide the required amount of heat. When filters are clogged, fan motors require greater energy input because of the higher resistance to air flow.

Recommended Maintenance

Following are a number of recommended maintenance steps for the Port Coquitlam Recreation Centre, to maintain comfort, equipment life, and reduce costs.

Every Month
Check filters and replace or clean if necessary

Every Six Months
Check settings of control points for HVAC system. Document.
Lubricate motor and drives (as per specs) to reduce friction
Check time clock settings

Every Year
Tighten belts and pulleys to reduce losses due to slip
Check bearings on motors and replace as necessary
Check dampers for correct operation and positioning
Check seals on dampers (particularly outside air dampers)
Ensure heating and cooling coils are clean
Ensure no obstruction of heaters, diffusers, and return grilles
Check weatherstripping on main doors and opening windows
Check operation and clean photocontrol covers

Every Two Years
Group relamping time? Actual time depends on lamp type and annual hours of use. Clean diffusers and fixtures with non-static cleaner

Check space temperatures and rebalance air systems if necessary to minimize overheating or overcooling of specific areas.

ENERGY MANAGEMENT ADMINISTRATION TASKS

Top Management Commitment. All energy conservation programs have a common feature that comes first on the list, commitment from top management. From making decisions about energy options to gaining cooperation of employees and staff, management needs to be committed. Consider distributing a newsletter notifying staff that the administration is committed to reducing energy consumption, while increasing comfort, and ask for their support and comments.

Charting Progress. Information telling staff about results from the conservation program should, above all, be clear, concise and easy to understand. Graphs, drawn by hand or by computer, are about the best way for everyone involved to quickly absorb how the program is working. Calculated numbers (for example, gigajoule per degree day for gas, or kWh per degree day for electricity) should be used consistently and complicated factors left for technical staff and omitted from the employee information aspect of the program.

The statement "Our electricity costs have been reduced 10% in the past 9 months alone" gets better support than explaining how "kilowatt-hours per normalized degree day period per cubic metre of building, were reduced 10%".

Staff Follow-up. Your staff will take a more active part in saving energy if they know how the program is working. If energy use goes up, it may be an incentive for them to try harder or at least ask questions, and if use has gone down, they can feel rewarded. This is one of the more important aspects of an overall energy management program.

Charting Progress. Information telling staff about results from the conservation program should, above all, be clear, concise and easy to understand. Graphs, drawn by hand or by computer, are about the best way for everyone involved to quickly absorb how the program is working. Calculated numbers (for example, gigajoule per degree day for gas, or kWh per degree day for electricity) should be used consistently and complicated factors left for technical staff and omitted from the employee information aspect of the program.

The statement "Our electricity costs have been reduced 10% in the past 9 months alone" gets better support than explaining how "kilowatt-hours per normalized degree day period per cubic metre of building, were reduced 10%".

Staff Follow-up. Your staff will take a more active part in saving energy if they know how the program is working. If energy use goes up, it may be an incentive for them to try harder or at least ask questions, and if use has gone down, they can feel rewarded. This is one of the more important aspects of an overall energy management program.

Setting Goals. After you have assessed energy use patterns and where most energy dollars are going, specific goals should be set. These goals can be both **short-term** (1 year or less) and **long-term** (1 to 5 year) goals. Many successful energy conservation programs direct efforts at specific tasks or projects, one at a time. The goals should include an estimated per cent energy use reduction, and this should be known by the employees. Long-terms goals usually involve reductions of 10 - 30%, but employee participation usually works better if short-term goals are stressed. There is a sense of satisfaction and "pulling together", for both management and staff, that comes from setting achievable goals.

ENERGY MANAGEMENT GRAPHIC AIDS

- Wall Switches

Stickers are available that fit over light switches to remind employees to switch off the lights to save energy.

RECORD KEEPING

Monitoring Energy Data

Once management is committed to taking steps to reducing energy use, the first component of all energy management plans is analyzing current energy use and monitoring it as an ongoing process. We recommend you set up a system to facilitate monitoring energy use in your Recreation Centre, either using municipal staff, or using a private service. Document the following information from the bills:

- Meter number and file number for the building
- Date the period begins
- Date the period ends
- kWh use
- kW (demand) use
- Power Factor

Divide kWh use by the number of days in the period to determine an average kWh use per day and compare with the period before. Demand use and power factor can be used directly as listed on the bill and compared. Ideally, kWh and kW will not go up without good reason, while power factor should not go below 90% or you will pay a penalty.

Use the data to create tables listing important information, and distribute summaries to concerned individuals. It is difficult to attribute direct energy savings to monitoring, but it is important as other types of bookkeeping. Monitoring energy use serves many purposes in an energy management program:

- help establish if and when closer examination of energy use is necessary
- determine whether components such as energy conserving equipment and insulation are performing as claimed
- detect equipment malfunction that costs you money
- identify where most energy is used, (ie.) where to look first for savings, and gives an idea of what the savings might be
- avoid penalties by ensuring power factor problems do not slip by unnoticed

Tracking Maintenance Data

Maintenance. To allow HVAC problems to be tracked, you should require that all work done be recorded, whether or not maintenance work is contracted out. We suggest using a coil-bound book to keep all records intact or, if records are loose-leaf, ensuring that copies are sent to the municipal hall for filing.

FURTHER B.C. HYDRO ENERGY CONSERVATION SERVICES

In addition to this walk-through audit, B.C. Hydro offers other assistance, from printed material to seminars, to help solve your energy conservation problems.

For further information on options that may be available to your municipality on reducing energy costs, contact Ray Denby at 293-7780 or the Commercial Energy Management Department (Vancouver).

CONCLUSION

We hope this energy audit will assist you in reducing your energy use in this facility and you will be able to use general principles outlined for this building to save energy and money in your other buildings. We would like to thank at this time the various people who provided assistance during the audit, and in particular Dennis McInnis, Assistant Foreman.

We will be contacting you in approximately six months to discuss your energy management program progress. In the meantime, if you require additional information on this audit or other Power Smart programs, please don't hesitate to call.

Thank you for the opportunity to discuss energy conservation with your municipality.

G.P. Lysyk
B.C. Hydro
Area Manager

ELECTRIC HISTORY

NAME: CITY PORT COQUITLAM
ACCT: 14-5170-14501
RATE: 1211

LOCATION: 2150 WILSON AVE
DISTRICT: PORT COQUITLAM CITY
SIC: 8. OTHER

-BILLING- -PERIOD--	READ DATE	DAYS	DEMAND	ENERGY (KW.H) TOTAL	ENERGY (KW.H) DAILY AVERAGE	REVENUE	PF SURCHARGE	TAX	TOTAL	PF	LF	¢/KWH
1990JAN	25JAN90	34	480	274,800	8,082	10,168	0	610	10,778	91	70	3.92
1989DEC	22DEC89	59	480	481,800	8,166	18,315	0	1,099	19,414	91	71	4.03
OCT	24OCT89	29	456	225,000	7,759	8,436	169	516	9,121	88	71	4.05
SEP	25SEP89	32	456	214,800	6,713	8,171	327	510	9,008	86	61	4.19
AUG	24AUG89	63	420	197,400	3,133	9,896	396	617	10,909	85	31	5.53
JUN	22JUN89	26	144	43,200	1,662	1,957	39	120	2,116	89	48	4.90
MAY	27MAY89	31	180	58,800	1,897	2,549	0	153	2,702	90	44	4.60
APR	26APR89	23	240	58,800	2,557	2,572	0	154	2,726	94	44	4.64
MAR	03APR89	40	456	316,200	7,905	11,669	0	700	12,369	91	72	3.91
FEB	22FEB89	28	468	222,000	7,929	8,426	0	506	8,932	92	71	4.02
JAN	25JAN89	34	456	250,800	7,376	9,107	0	546	9,653	91	67	3.85
		365	376	2,068,800	5,510	81,098	931	4,921	86,950	90	58	4.37
1988DEC	22DEC88	28	456	220,800	7,886	8,327	0	500	8,827	91	72	4.00
NOV	24NOV88	30	444	221,400	7,380	8,275	0	496	8,771	90	69	3.96
OCT	25OCT88	28	432	215,400	7,693	8,050	161	493	8,704	88	74	4.04
SEP	27SEP88	34	432	226,200	6,653	8,658	346	540	9,544	87	64	4.22
AUG	24AUG88	29	228	70,800	2,441	3,134	282	205	3,621	84	45	5.11
JUL	26JUL88	33	162	60,000	1,818	2,479	0	149	2,628	90	47	4.38
JUN	23JUN88	28	156	57,600	2,057	2,382	0	143	2,525	91	55	4.38
MAY	26MAY88	63	456	229,200	3,638	11,131	0	668	11,799	92	33	5.15
MAR	24MAR88	29	438	235,800	8,131	8,615	0	517	9,132	91	77	3.87
FEB	24FEB88	29	432	237,600	8,193	8,628	0	518	9,146	91	79	3.85
JAN	26JAN88	34	432	265,800	7,818	9,361	0	562	9,923	91	75	3.73
		365	370	2,040,600	5,792	79,040	789	4,791	84,620	90	63	4.25
1987DEC	23DEC87	29	468	236,400	8,152	8,801	0	528	9,329	90	73	3.95
NOV	24NOV87	32	468	256,200	8,006	9,316	186	570	10,072	89	71	3.93
OCT	23OCT87	29	420	226,200	7,800	8,263	165	506	8,934	88	77	3.95
SEP	24SEP87	31	270	132,600	4,277	4,979	199	311	5,489	86	66	4.14
AUG	24AUG87	32	360	86,400	2,700	4,288	86	262	4,636	88	31	5.37
		153	397	937,800	6,187	35,647	636	2,177	38,460	88	64	4.27

APPENDIX A

GAS HISTORY

NAME: CITY PORT COQUITLAM LOCATION: 2150 WILSON AVE
ACCT: 14-5170-14501 DISTRICT: PORT COQUITLAM CITY
RATE: 0000 SIC : 8. OTHER

-BILLING- -PERIOD--		READ DATE	DAYS	--CONSUMPTION (GJ)-- MONTHLY	12 MONTHS RUNNING	----REVENUE ($)---- MONTHLY	12 MONTHS RUNNING	$/GJOULE
1990	JAN	25JAN90	34	435	2,679	1,836	11,335	4.22
1989	DEC	22DEC89	59	670	2,708	2,829	11,458	4.22
	OCT	24OCT89	29	140	2,759	594	11,672	4.24
	SEP	25SEP89	32	43	2,785	184	11,781	4.32
	AUG	24AUG89	63	96	2,818	413	11,922	4.31
	JUN	22JUN89	26	55	2,804	235	11,862	4.29
	MAY	27MAY89	31	90	2,815	384	11,908	4.27
	APR	26APR89	23	99	2,914	419	12,325	4.24
	MAR	03APR89	40	562	2,959	2,373	12,513	4.22
	FEB	22FEB89	28	490	2,822	2,068	11,937	4.22
	JAN	25JAN89	34	464	2,773	1,959	11,730	4.22
			365	2,708		11,458		4.26
1988	DEC	22DEC88	28	392	2,953	1,655	12,345	4.22
	NOV	24NOV88	30	323	3,074	1,363	12,765	4.23
	OCT	25OCT88	28	167	3,081	708	12,742	4.24
	SEP	27SEP88	34	81	3,119	345	12,871	4.27
	AUG	24AUG88	29	31	3,123	136	12,876	4.36
	JUL	26JUL88	33	48	3,093	206	12,748	4.31
	JUN	23JUN88	28	71	3,046	303	12,542	4.28
	MAY	26MAY88	63	392	2,975	1,660	12,239	4.23
	MAR	24MAR88	29	348	2,583	1,468	10,579	4.22
	FEB	24FEB88	29	457	2,235	1,927	9,111	4.22
	JAN	26JAN88	34	644	1,778	2,574	7,184	4.00
			365	2,953		12,345		4.23
1987	DEC	23DEC87	29	532	1,134	2,149	4,610	4.04
	NOV	24NOV87	32	343	603	1,397	2,461	4.07
	OCT	23OCT87	29	201	260	819	1,064	4.08
	SEP	24SEP87	31	59	59	245	245	4.15
			121	1,134		4,610		4.09

APPENDIX A

APPENDIX B

LIGHTING: OPERATING HOURS DATA

Location	Old Lite	Old Watt	New Lite	New Watt	# of lite	DELAMP	Old Hrs Wk	New Hr Wk	Wk Yr	EE BALST	New Sys # of Lite
ARENA #1											
Foreman	F40/CW	93	EE 'F40'	79	8	2	60	55	50	y	
Meeting Area	F40/CW	93	EE 'F40'	79	18		35		52	y	
Spare Off	F40/CW	93	EE 'F40'	79	2		50	45	50	y	
Co-ordinator	F40/CW	93	EE 'F40'	79	2		60	55	50	y	
Lobby	F40/CW	93	EE 'F40'	79	2		168		50	y	
Young Rm	F40/CW	93	EE 'F40'	79	10		40		40	y	
Lunch Rm	F40/CW	93	EE 'F40'	79	5	1	140	50	50	y	
Ice surface	Metl Hal.	450	H.P.S.	305	40		140	100	38		
Dressing Rm1	F40/CW	93	EE 'F40'	79	2		140	50	40	y	
Dressing Rm2	F40/CW	93	EE 'F40'	79	2		140	50	40	y	
Dressing Rm3	F40/CW	93	EE 'F40'	79	2		126	36	40	y	
Dressing Rm4	F40/CW	93	EE 'F40'	79	2		126	36	40	y	
Compress. Rm	F96/430m	172	EE96/430	142	4		140		52		
Compress. Rm	F40/CW	93	EE 'F40'	79	1		140		52	y	
Compress. Rm	F40/CW	93	EE 'F40'	79	3		140		52	y	
Workshop	F40/CW	93	EE 'F40'	79	6	1	140		52	y	
Mabbot Rm	F40/CW	93	EE 'F40'	79	116	8	91	63	52	y	
Mabbot Rm	Inc.'R'	50	No Chg.	50	24		15		52		
Kitchen	F40/CW	93	EE 'F40'	79	4		84	42	52	y	
Hall/stair	F40/CW	93	EE 'F40'	79	4	1	168		52	y	
Canopy	Incand.	25	No Chg.	25	24		84		52		
Total Bldg	Exit Lts.	40	C.F. 5W	12	13		168		52		
Ice surface	Metl Hal.	450	H.P.S.	305	40		75	45	14		
Ice Surface	Merc.Vap.	450	H.P.S.	305	66		75	45	14		

APPENDIX B

LIGHTING: OPERATING HOURS DATA

Location	Old Lite	Old Watt	New Lite	New Watt	# of lite	DELAMP	Old Hrs Wk	New Hr Wk	Wk Yr	EE BALST	New Sys # of Lite
WILSON CENTRE											
Pottery Room	F40/CW	93	EE 'F40'	79	32	4	50		52	y	
Entrance	F40/CW	93	EE 'F40'	79	4	1	168		52	y	
Outer Office	F40/CW	93	EE 'F40'	79	2		40		52	y	
Wall lights	Incand.	60	C.F.13W	17	3		40		52		
Reception	F40/CW	93	EE 'F40'	79	4		84		52	y	
Reception	Incand.	75	C.F.13W	17	2		168		52		
Entr. Halls	Incand.	75	C.F.13W	17	7		168		52		
Mtg. Rm #1	F40/CW	93	EE 'F40'	79	12	1	40		52	y	
Mtg. Rm #1	Incand.	100	C.F.18W	26	4		40		52		
Mtg. Rm #2	F40/CW	93	EE 'F40'	79	12	1	84		52	y	
Mtg. Rm #2	Incand.	100	C.F.18W	26	3		84		52		
Cafe	F40/CW	93	EE 'F40'	79	13	2	84	40	52	y	
Cafe	Incand.	100	C.F.18W	26	4		84		52		
Pool Tbl Rm	F40/CW	93	EE 'F40'	79	15	3	84		52	y	
Auditorium/1	F40/CW	93	EE 'F40'	79	32	4	84	70	52	y	
Auditorium/2	F40/CW	93	EE 'F40'	79	32	4	84	70	52	y	
Wshrms	F40/CW	93	EE 'F40'	79	2		168		52	y	
Kitchen	F40/CW	93	EE 'F40'	79	10	2	84		52	y	
ARENA #2											
Out North Dr	Incand.	60	No Chg.	60	6		168	84	52		
Lobby	F40/CW	93	EE 'F40'	79	22		168		42	y	
Lobby	F40/CW	93	EE 'F40'	79	75	4	168		42	y	
Ice Surface	Merc.Vap.	450	H.P.S.	305	66		126	100	38		
Ticket Off.	F40/CW	93	EE 'F40'	79	4		108		38	y	
Skate Shop	F40/CW	93	EE 'F40'	79	3		108		38	y	
Concession	F40/CW	93	EE 'F40'	79	9	1	88		38	y	
Dressing Rm	F40/CW	93	EE 'F40'	79	9	1	126	36	40	y	
Hallway	F40/CW	93	EE 'F40'	79	6	2	168		40	y	

APPENDIX C

LIGHTING: GENERAL SAVINGS TABLE

Area	Convert to Lamp Type	Hours Reduced	SAVINGS from MEASURE: Reduce Hours	Convert Lamps	Convert Ballast	Delamping
ARENA #1						
Foreman	EE 'F40'	5	$7	$12	$8	$28
Meeting Area	EE 'F40'	0	$0	$23	$16	$0
Spare Off	EE 'F40'	5	$2	$3	$2	$0
Co-ordinator	EE 'F40'	5	$2	$4	$3	$0
Lobby	EE 'F40'	0	$0	$12	$8	$0
Young Rm	EE 'F40'	0	$0	$11	$8	$0
Lunch Rm	EE 'F40'	90	$84	$7	$5	$33
Ice surface	H.P.S.	40	$1,368	$1,102	$0	$0
Dressing Rm1	EE 'F40'	90	$33	$3	$2	$0
Dressing Rm2	EE 'F40'	90	$33	$3	$2	$0
Dressing Rm3	EE 'F40'	90	$33	$2	$1	$0
Dressing Rm4	EE 'F40'	90	$33	$2	$1	$0
Compress. Rm	EE96/430	0	$0	$44	$0	$0
Compress. Rm	EE 'F40'	0	$0	$5	$4	$0
Compress. Rm	EE 'F40'	0	$0	$15	$11	$0
Workshop	EE 'F40'	0	$0	$25	$18	$34
Mabbot Rm	EE 'F40'	28	$731	$248	$177	$176
Mabbot Rm	No Chg.	0	$0	$0	$0	$0
Kitchen	EE 'F40'	42	$41	$6	$4	$0
Hall/stair	EE 'F40'	0	$0	$18	$13	$41
Canopy	No Chg.	0	$0	$0	$0	$0
Total Bldg	C.F. 5W	0	$0	$159	$0	$0
Ice surface	H.P.S.	30	$378	$183	$0	$0
Ice Surface	H.P.S.	30	$624	$301	$0	$0

APPENDIX C

LIGHTING: GENERAL SAVINGS TABLE

Area	Convert to Lamp Type	Hours Reduced	SAVINGS from MEASURE: Reduce Hours	Convert Lamps	Convert Ballast	Delamping
WILSON CENTRE						
Pottery Room	EE 'F40'	0	$0	$51	$36	$48
Entrance	EE 'F40'	0	$0	$18	$13	$41
Outer Office	EE 'F40'	0	$0	$3	$2	$0
Wall lights	C.F.13W	0	$0	$13	$0	$0
Reception	EE 'F40'	0	$0	$12	$9	$0
Reception	C.F.13W	0	$0	$51	$0	$0
Entr. Halls	C.F.13W	0	$0	$177	$0	$0
Mtg. Rm #1	EE 'F40'	0	$0	$16	$11	$10
Mtg. Rm #1	C.F.18W	0	$0	$31	$0	$0
Mtg. Rm #2	EE 'F40'	0	$0	$34	$24	$20
Mtg. Rm #2	C.F.18W	0	$0	$48	$0	$0
Cafe	EE 'F40'	44	$117	$16	$11	$41
Cafe	C.F.18W	0	$0	$65	$0	$0
Pool Tbl Rm	EE 'F40'	0	$0	$37	$26	$61
Auditorium/1	EE 'F40'	14	$95	$71	$51	$81
Auditorium/2	EE 'F40'	14	$95	$71	$51	$81
Wshrms	EE 'F40'	0	$0	$12	$9	$0
Kitchen	EE 'F40'	0	$0	$24	$17	$41
ARENA #2						
Out North Dr	No Chg.	84	$79	$0	$0	$0
Lobby	EE 'F40'	0	$0	$109	$78	$0
Lobby	EE 'F40'	0	$0	$351	$250	$131
Ice Surface	H.P.S.	26	$1,467	$1,818	$0	$0
Ticket Off.	EE 'F40'	0	$0	$11	$8	$0
Skate Shop	EE 'F40'	0	$0	$9	$6	$0
Concession	EE 'F40'	0	$0	$19	$13	$16
Dressing Rm	EE 'F40'	90	$134	$8	$6	$23
Hallway	EE 'F40'	0	$0	$19	$13	$62

APPENDIX D

MOTORS: ENERGY EFFICIENT CONVERSION SAVINGS

We have costed out a sample of savings possible by converting some of your motors to Energy-Efficient types. All savings costed at 5 cents/kWh.

Application	H.P.	Annual Hours	Old Eff.	New Eff.	Demand Savings	Annual Dollar Savings
Compressor #1	60	3500	90.2	93.6	1.80	$315
Compressor #2	60	3500	90.2	93.6	1.80	$315
Compressor #3	50	5000	88.5	93.5	2.25	$563
Compressor #4	50	5000	88.5	93.5	2.25	$563
Brine Pump #1	25	4500	87.7	92.4	1.08	$243
Brine Pump #2	20	4500	86.6	92.2	1.05	$235
Cooling Tower #1	5	3500	81.2	88.1	0.36	$63
Cooling Tower #2	5	3500	81.2	88.1	0.36	$63

~~B 7600~~ Z Oct 31

THE CORPORATION OF THE
CITY OF PORT COQUITLAM

M E M O R A N D U M

TO: Janna Taylor, Director
Parks and Recreation

DATE: October 24, 1990

FROM: Bryan R. Kirk
City Administrator

RE: B.C. Hydro Power Smart Report

Would you please review and comment on the attached report.

It will be presented to Council at its meeting of November 5, 1990.

Thank you.

/dp
Att.

BC hydro
Lower Mainland Regional Marketing
FAX (604) 293-7781

POWER SMART

22 October 1990

Mayor and Council
District of Port Coquitlam
2580 Shaughnessy St.
Port Coquitlam, BC
V3C 2A8

Your Worship and Council:

Over the past year, BC Hydro has been in contact with all the municipalities in our service area regarding Municipal Energy Efficiency. Our initial contact was a two-fold approach. The municipalities received a letter from John P. Sheehan, Vice-President of Customer Services explaining the Municipal Energy Efficiency Policy and asking that the policy be considered for adoption. We also offered each municipality a complimentary Municipal Energy audit of a municipal facility of your choise to demonstrate potential electrical energy savings. In your municipality, the Port Coquitlam Recreation Centre was audited and showed potential savings of $16,780 annually. We are currently following up your audit with Mr. Tom Jackson, Arena Supervisor to review what savings have been achieved to date.

When the results of your audit were presented to Council, the municipality was asked to adopt an Energy Efficiency Policy. To date over 50 municipalities have adopted the policy and the numbers continue to grow. These municipalities have recognized the need to have a consistent policy in place to ensure that all levels of their organization are committed to energy efficiency.

Enclosed with this letter is the Municipal Energy Efficiency Policy, typical of the statement being adopted by many B.C. Municipalities. It outlines the policy and performance standards we would like to see you adopt. BC Hydro will continue to work closely with your staff to make this policy easy to implement and adapt it to your needs.

We ask your Council to consider adoption of the Municipal Energy Efficiency Policy at your earliest convenience. Our Power Smart Marketing Representative, Doug Fraser at 293-7772 would be pleased to answer any questions you may have concerning this or other Power Smart information.

Yours truly,

G Lysyk

Mr. G. Lysyk
Area Manager
Lower Mainland North

Enclosure

Walk-Through Energy Audit Report

for the

CITY OF PORT COQUITLAM

Port Coquitlam Recreation Centre

Conducted by

Mr. Ray Denby (B.C. Hydro)
Mr. Tom Knox (Enerdata Systems Ltd.)

May, 1990

File Number: 89-17

B. C. Hydro

MUNICIPAL ENERGY EFFICIENCY PROGRAM

TABLE OF CONTENTS

APPENDIX A
Electrical and Gas History Printouts

APPENDIX B
Lighting: Operating Hours Data

APPENDIX C
Lighting: General Savings Table

APPENDIX D
Motors: Energy Efficient Conversion Savings

The following summary lists energy conservation measures applicable to the Port Coquitlam Recreation Centre and generally considered to have a good payback. Electrical savings have been estimated for most measures, but consideration should be given to all recommendations. Details of savings are contained in the report text.

SUMMARY OF SAVINGS

ACTION	Annual Potential $ Savings	Annual kWh Savings
Electrical		
Correct and Monitor Power Factor	900	
Start-up/Shut-down of Ice Compressors re Billing	1,200	24,000
Delamping Luminaires - General	980	19,600
Reducing Operating Hours - Cafe	120	2,400
Reducing Operating Hours - Auditoriums	190	3,800
Reducing Operating Hours - Arena #1 Ice Surface	1,750	35,000
Reducing Operating Hours - Arena #2 Ice Surface	2,090	41,800
Reducing Operating Hours - Mabbot Room	730	14,600
Reducing Operating Hours - Mabbot Rm (Kitchen)	40	800
Replace Existing Fluorescent Lamps - 4 foot Fluorescents	1,290	25,800
Replace Existing Fluorescent Lamps - 8 foot Fluorescents	45	900
Replace Incandescents with Compact Fluorescents	385	7,700
Replace Metal Halide Ice Lighting with HPS	1,285	25,700
Convert Mercury Vapour to High Pressure Sodium	2,120	42,400
Energy-Efficient Fluorescent Ballast Savings	925	18,500
Exit Light Conversion	160	3,200
Place Outdoor Incandescents on Timer or Photocell	80	1,600
Install Occupancy Sensors - Dressing Rooms	130	2,600
Install Energy-Efficient Motors	2,360	47,200
TOTAL SAVINGS	**$16,780**	**317,600**
kWh Consumption		2,115,545
PER-CENT kWh SAVINGS		15%

SUMMARY OF SAVINGS

Natural Gas	
Reduced Flow Shower Head Savings - (Each)	$ 31
Lower Water Temperature in the Ice Cleaning Machine	$810
Reduce Quantity of Ice Flood Water	$810
TOTAL NATURAL GAS SAVINGS	$1,650

Other	
Monitor Demand Usage	*
Zoning for Varying Lighting Levels	*
Removing One Lamp From a Two-Lamp Fixture	*
Replace 'Egg-Crate' Fixture Diffusers	*
Clean Luminaires	*
Improving Lighting Efficiency with Paint	*
Group Relamping	**
Investigate Staging of Compressors	*
Summer Operation of Brine Pumps (Costing)	*
Weatherstripping and Caulking	*
Shutting Off Gas Radiant Heaters	**
Low Emissivity Ceilings	*
Check and Clean Filters	*
Monitoring Energy Data	*
Tracking Maintenance Data	

* = Documented in this report, no calculations done. Generally Considered A Cost-Effective Measure
** = Documented in this report, no calculations done. Please read section for further details

INTRODUCTION

Energy Management Program Components

An energy management program for a building usually involves three different steps: bill analysis; a 'walk-through' energy audit; then a detailed audit (collection of equipment and operation details and calculation of possible savings in areas). Steps should be done in this order.

Bill analysis will determine potential savings as a result of a conservation program and (as an ongoing yearly measure) will verify those savings. The 'walk-through' is a quick review of energy use in a building (do this every few years), and thirdly, a detailed audit may be done, when and if indicated by the previous two steps.

Some collection of equipment and operation details are part of an initial walk-through audit.

The Walk-Through Energy Audit

An energy audit is an important and necessary step in setting up an energy management program. A complete audit involves the compiling of historical energy use data; a detailed analysis of the building and all equipment, their hours and method of operation; and evaluating and making recommendations based on the previous steps. A walk-through audit covers the same items as a complete audit, but in less detail. Equipment is often not itemized in detail and complicated evaluations (eg. heat recovery from exhaust) are not included in a walk-through audit.

The walk-through audit provides an overview of general energy use and recommends common and cost-effective conservation steps. It will point the way to measures requiring more investigation or simply note that there are no probable further measures for a building. A walk-through is usually a first step to determine if a more detailed energy study is likely to be cost-effective.

Building Description

The Port Coquitlam Recreation Centre is a multi-use building with two ice sheets (operating in winter only), a Seniors Centre with a Pottery room, Pool tables, Cafe, and General Purpose rooms. Hours of operation for the ice surfaces vary from approximately

140 to 126 hours/week in the winter to 75 hours/week in the summer. The remainder of the area(s) operate about 10 to 16 hours/day, year round.

Lighting varies from recently reballasted Mercury Vapour fixtures (Ice #2); Metal Halide (Ice #1); Incandescent (mostly in the Seniors section); and standard F40 fluorescents (throughout).

Heating is largely by natural gas, with natural gas radiant heaters in the Ice area, and gas forced air in other areas. There is some electric heat in both the recreation centre area and the arenas.

Hot Water is electrically heated for the Recreation section (the new section has gas) and there is a heat reclaim system from the compressors. The facility typically runs out of hot water when the 'old-timers' play and during tournaments.

Total energy cost for 1989:
Electrical **$86,950.00** (2,068,800 kWh) Natural Gas **$11,460.00** (2,710 GJ)

Correct and Monitor Power Factor

Where power factor is recorded for a building it is a very important item in energy use. Because certain types of equipment use energy not recorded at the normal kWh meter, another factor is taken into account and noted on your bill as power factor. The higher this factor the better. To avoid penalties, it must be 90% or greater. Correcting a low power factor to at least 90% usually has a very short payback (1 to 2 years). The solution can even be as simple as replacing a blown fuse in an existing capacitor.

Your billing record indicates you are currently paying a penalty for poor power factor in the **summer months**. Correcting to 90% or better would result in a dollar **savings (annually) of $900.00** per year. Because the problem is in the summer months only (although power factor is only about 91% for the winter months), we suspect the problem is in the air-conditioning equipment. Correcting at the transformer (primary side) could be a cost effective approach.

Even if the problem is corrected, we encourage you to regularly watch your power factor readings in all municipal buildings and take immediate action if it falls below 90%. If maintenance personnel do not see the bills regularly, consider training the person who pays the bill each month to watch out for penalties and power factor below (or approaching) 90%.

Monitor Demand Usage

Demand use and charges can be a very important part of some municipal buildings energy use, while in others it is not a major concern.

Since your demand is over 150 kW for any billing period, you pay $6.19 for every 1,000 Watts (1 kW) you use, even if this use is only for about 1/2 hour in that billing period. Note there is also a minimum demand charge on accounts that have a large demand for most, but not all, months.

As with power factor, we encourage you to watch your demand recordings, note any significant changes, and attempt to determine if any significant increase can be avoided in the future.

Start-up/Shut-down of Ice Compressors re Billing

When the ice-making compressors run, they have a significant impact on the demand charges paid that month.

Whenever possible, ensure that compressors are not started up one or two days before the beginning of a new building period. In that case you would then be billed for the entire demand charge but only have had the use of the equipment for a few days that billing period. Demand is calculated on a 1/2-hour window in the billing period.

It cannot be predicted exactly what day your meters will be read by B. C. Hydro, but examining your bills for the arena will show typical reading dates. This will usually be fairly consistent. Being aware of the costs could make it worth planning to avoid these demand charges. For example, since your meters are typically read around the 22nd to the 27th of each month, try to plan so the ice will not be put in a few days before the 22nd, avoiding compressor start-up. Similarly, consider the date the ice is taken out and the scheduling of compressor maintenance in the summer, and the potential effect on your bill. Note (eg.) May 26/88 reading date where demand was 456 kW (normal winter demand) but kWh use per day was only 3,600 (about half of winter consumption). A similar situation was noted in the August 24/89 reading date. These readings indicate the compressors are being started up (and/or shut down) about half way through the billing period, incurring al the demand but using relatively little energy. See **APPENDIX A** for details.

If 200 kW of demand charges are avoided (difference between summer and winter demand) for one billing period in a year and considering applicable minimum demand charges, you will save **$1,200.00 per year** (@ 5 cents/kWh).

LIGHTING

Note that savings are calculated in a specific order. The most cost-effective step is usually delamping. Second is reducing the hours of use for the remaining lamps. Thirdly, savings from any conversions (eg. to energy-efficient fluorescent tubes) are calculated using:
1. remaining lamps at 2. reduced hours.

If any preceding step is not done, savings will be greater for the latter steps.

See **APPENDIX B** - LIGHTING: OPERATING HOURS DATA and
APPENDIX C - LIGHTING: GENERAL SAVINGS TABLE for details.

INDOORS

The following topics are intended as a general background for specific areas (in the Port Coquitlam Recreation Centre) that have potential lighting energy savings. The principle is the same for savings in areas not covered in this report.

Zoning for Varying Lighting Levels

Zoning an office for varying lighting levels means the level of illumination for a particular area can be specific to the task performed in that area to potentially save energy and maintenance costs. This is similar to the principle of providing task lighting for a desk but applied over a wider area. Zoning gives potential savings in energy and maintenance costs. Examples of zones that could be established for various light levels are customer service areas, halls, drafting or accounting offices, and perimeter areas that have a high contribution of natural daylight. Control of lighting in the zoned area can be achieved in a number of ways: manual or photocell controlled switching; timers; automatic dimming switches; or any combination of the above.

DELAMPING

Delamping Luminaires - General

Delamping areas that are "over-lit" for a particular use offers one of the easiest and least expensive ways to reduce electrical energy operating costs. In many buildings luminaires are placed in a standard grid pattern without regard to eventual use of the area. This results

in some areas being "over-lit" for the work tasks performed. Delamping not only saves energy, but also reduces lighting maintenance costs as there are less luminaires to service.

Delamping 44 fluorescent luminaires (@ 2 lamps per fixture) in various areas of the Recreation Centre will result in **savings of $980.00 per year** (@ 5 cents/kWh).

Delamped luminaires should be identified (eg. a red or blue sticker) so that they are not re-energized in error during future lighting maintenance work. Please see the following table for recommended areas and fixtures to delamp.

Delamping Recommendations

Location	# of Fixtures To Delamp
Mabbot Rm	8
Auditorium/1	4
Auditorium/2	4
Lobby	4
Pottery Room	4
Pool Tbl Rm	3
Cafe	2
Foreman	2
Hallway	2
Kitchen	2
Concession	1
Dressing Rm	1
Entrance	1
Hall/stair	1
Lunch Rm	1
Mtg. Rm #1	1
Mtg. Rm #2	1
Storage	1
Workshop	1

Removing One Lamp From a Two-Lamp Fixture

Savings from delamping do not have to involve removing two tubes in a fixture. While this is normally the situation since two lamps are required (plus the ballast) to complete the circuit, you can use a "phantom" tube to allow the remaining lamp to operate at reduced light output. These tubes look like fluorescent lamps, but give no light. Since their only function is to complete the circuit, they have an indefinite lifespan. The combination of one standard lamp and a phantom tube results in an energy savings and corresponding light

level reduction of 66%. This option is applicable to various areas in the Recreation Centre, and with a little consideration, you may find additional areas where savings are possible through delamping one lamps only from either a two or four lamp fixture. One caution to note is the possibility of large installations of phantom tubes lowering power factor.

REDUCING OPERATING HOURS

Probably the simplest and least expensive method of saving energy used in lighting is to shut off the lights when not needed. From our initial investigation, it would appear there is good potential for reducing the hours of use in the Recreation Centre by switching off lights when the area is not occupied.

Switching Off Fluorescent Lamps

Contrary to a popular belief, improvements in fluorescent lamps and ballasts, along with higher costs for electricity means it pays to switch off fluorescent lights when you leave a room for more than five minutes.

The following savings are available by reducing operating hours in various areas in the Recreation Centre. All numbers given are those after delamping.

Reducing Operating Hours - Cafe

In the Cafe, if the 11 - F40 Fluorescent fixtures can have the operating hours reduced by 40 hours/wk, **savings would be $120.00 per year.** This would also mean 2,000 fewer operating hours for the lamps each year.

Reducing Operating Hours - Auditoriums

In the Auditoriums, reducing the operating hours of the 28 - F40 fixtures (each Auditorium) by 14 hours per week, **savings would be $190.00 per year.**

Reducing Operating Hours - Arena #1 Ice Surface

Reducing the operating hours of the 40 - 400 Watt Metal Halide fixtures in Arena #1 by 40 hours/week (winter) and by 30 hours/week in summer (currently estimated at 75 hours/week in summer), will give **savings of $1,750.00 per year.**

Reducing Operating Hours - Arena #2 Ice Surface

Reducing the operating hours of the 66 - 400 Watt Mercury Vapour fixtures in Arena #2 by 26 hours/week (winter) and by 30 hours/week in summer (currently estimated at 75 hours/week in summer), will give **savings of $2,090.00 per year.**

Reducing Operating Hours - Mabbot Room

Reducing the operating hours of the lighting in the Mabbot Room by an average of 4 hours/day, 7 days per week, will give **savings of $730.00 per year.**

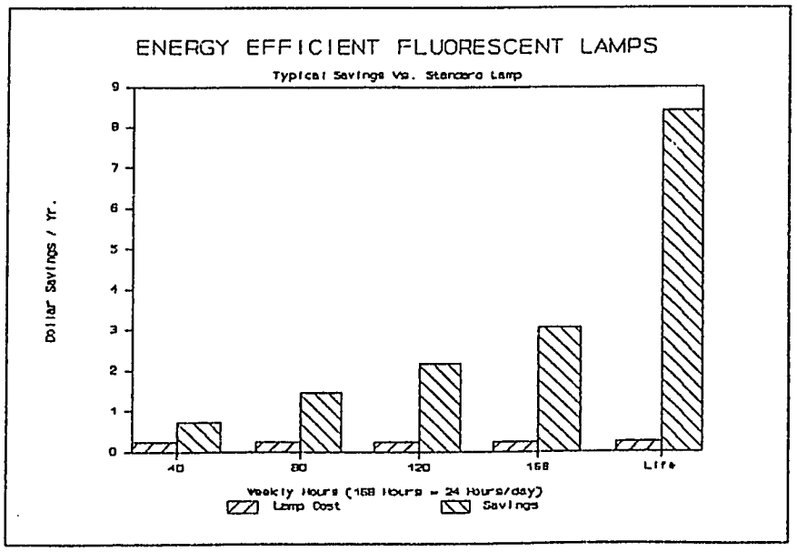
Reducing Operating Hours - Mabbot Rm (Kitchen)

Reducing the operating hours of the lighting in the Mabbot Room by an average of 6 hours/day, 7 days per week will give **savings of $40.00 per year.**

FLUORESCENT LAMP CONVERSIONS

Energy Efficient Fluorescent Lamps

An Energy Efficient (4 foot) fluorescent lamp uses 7 Watts less than a standard fluorescent lamp, with only a slight decrease in light output. Energy Efficient lamps are available to replace all popular sizes of standard lamps.



The longer the hours of operation, the greater the energy savings, and the faster the payback on possible premiums paid for the energy saving lamp. Each 4-foot energy saving fluorescent lamp

typically saves $8 to $10 (based on 5 cents per kWh) over its life. The graph illustrates cost versus yearly savings for an energy efficient lamp operating at various hours. The last example shows the typical proportion of cost versus savings, over a lamp life of 24,000 hours.

Replace Existing Fluorescent Lamps - 4 foot Fluorescents

We have calculated the approximate savings for the (approximate) 492 fixtures (2 lamps per fixture, including ballast) in the building (at various operating hours).

If you replace these lamps with reduced wattage 34 Watt fluorescents, you will save **$1,290.00 per year.**

Replace Existing Fluorescent Lamps - 8 foot Fluorescents

Replacing the lamps in the 4 - 8 foot fluorescent fixtures in the Compressor Room (@ 140 hours/wk operation) with energy efficient lamps will save **$45.00 per year.**

Power Smart: EE Lamp Rebate Program

To introduce you to the benefits of Energy Efficient Fluorescent lamps, BC Hydro has introduced a new Power Smart Energy Efficient Fluorescent Lamp Rebate Program designed to contribute towards the higher initial cost of the Energy Efficient Fluorescent lamp. B.C. Hydro will rebate you 25 cents per 4 foot lamp when it replaces a 40 watt 'standard' fluorescent. Other rebates under this program are as follows:

25 cents/lamp - a 25 Watt (EE) lamp replacing a standard 30 Watt
50 cents/lamp - a 60 Watt (EE) lamp replacing a standard 75 Watt
50 cents/lamp - a 95 Watt (EE) lamp replacing a standard 110 Watt

Please contact our local office for further information or application forms.

OTHER CONVERSIONS

Replace Incandescents with Compact Fluorescents

Incandescent lighting in the building could be replaced with more efficient 'Compact Fluorescent' lamps. These lamps can directly replace incandescents in the 25 to 100 Watt size and using the existing socket. With an estimated life of more than 10,000 hours, these lamps will last 10 times longer than 'standard' incandescents and twice as long as the 'Extended service' type (light output will be greater if replacing extended service types). The extended life can mean drastically reduced maintenance hours. Replacing the existing incandescents with Compact Fluorescents will give **savings of $385.00 per year.**

Compact fluorescents are not recommended for cold environments and currently, most operate with a power factor below 90% (conversion of large number of incandescents to Compact Fluorescent **may** lower your overall building power factor).

For standard incandescent bulbs, the general replacements are as follows:

Incandescent	Compact Fluorescent
100 Watt	18 Watt (26 Watts with Ballast)
60 Watt	13 Watt (16 Watts with Ballast)
40 Watt	9 Watt (10 Watts with Ballast)

Replace Metal Halide Ice Lighting with HPS

The existing lighting for the ice surface (Arena #1) is provided by 400 Watt Metal halide lights. Replacing these with High-Pressure Sodium lamps (HPS) will save energy, with slightly lower lighting levels (about 5%). Costs for replacement of the lamps will also be slightly less, since the HPS lamps have a life span about 20% greater than the existing lamps.

If the 40 - 400 Watt Metal Halide lamps are replaced with 250 Watt HPS fixtures (operating 100 Hours/week), the result will be savings of $1,100.00 (@ 5 cents/kWh) for the winter months. In summer months savings will be $185.00 (@ 45 hours/wk). Total **savings for converting the Metal Halide fixtures to HPS will be $1,285.00 per year.**

There is one item to consider when replacing the metal halide with HPS and that is television or video productions of ice events. HPS lighting gives relatively poor images for TV or video, except for newer and relatively short-lived colour improved types. One possible alternative would be to leave some of the existing fixtures in place and use them when required for such events. Since video productions are usually a very small percentage of total ice-time, the other advantages of HPS lighting should be carefully considered.

Convert Mercury Vapour to High Pressure Sodium

Lighting in Arena #2 of the Recreation Centre is provided by Mercury Vapour luminaires, recently reballasted and relamped (Summer, 1989). While conversion to an efficient High Pressure Sodium fixture is not likely to be cost-effective now that you have new ballasts in place, we have costed out savings from this measure to give you an idea of expected kWh savings possible from typical conversions.As you are aware, the HPS lighting renders colour differently than Mercury Vapour or Metal Halide, but this is generally a consideration only where colour matching is critical.

For 66 - 400 Watt Mercury Vapour lamps converted to 250 Watt HPS lamps (@ 100 hours/week for 38 weeks/year and 5 cents/kWh), savings of **$1,820.00 per year** are achievable. This option will result in improved lighting levels. The above savings are for the winter months. In summer months savings by this conversion (operating 45 hours/wk.) will be **$300.00 per year.** Both figures assume reduced hours are already implemented. Total **savings will be $2,120.00 per year.**

Use Energy-Efficient Fluorescent Ballasts

When purchasing new or replacement fluorescent ballasts consider the advantages of new energy saving ballasts. These new ballasts offer potential energy savings in the order of 10% to 20% over standard ballast designs. Energy-efficient ballasts operate cooler and as a result offer longer ballast life. Choose the ballast type most suitable to your application. Different ballasts offer different features:

1) **Energy Efficient Magnetic core ballasts** are similar to standard ballasts, but are made from better quality materials. This results in lower losses, reduced heat generation, improved electrical performance, higher efficiency and, often, extended life. A luminaire with an energy efficient magnetic ballast saves 10 watts per hour compared to the same luminaire with a standard ballast.

2) **Electronic Ballasts** use solid-state technology to perform traditional ballast functions and are the most efficient ballasts on the market today. Benefits include longer life - up to two times that of standard ballasts and higher efficiency. A luminaire with an electronic ballast saves 23 watts compared to the same luminaire with a standard ballast.

3) **Multi-level energy efficient ballasts** allow the light output to be switched from high to low mode. These ballasts give you reduced energy costs without having to resort to delamping. With thought, you can use them to create a versatile and efficient lighting system. On high mode, the lamp gives 100% of light output. The low mode gives a 40% savings in energy consumption with corresponding 40% reduction in light output. Although the average cost of a multi-level ballast is twice that of a standard ballast, the low mode power savings will usually payback this investment in a few years.

Energy-Efficient Fluorescent Ballast Savings

For all ballasts (F40 or F34 lamps) converted to energy-efficient ballasts (core/coil type at 10 watts/ballast), **savings would be approximately $925.00 per year.**

Replace 'Egg-Crate' Fixture Diffusers

Without something to diffuse or spread out light from fluorescent lamps there would be significant glare, resulting in discomfort for occupants. Devices to reduce the glare are commonly known as diffuser covers and placed below the lamps.

While these diffusers are necessary to reduce glare they also reduce light output since they absorb some of the light passing through them. Some diffusers absorb less light than others and therefore result in a more efficient lighting system. Fixtures in the pottery room have what are called 'egg-crate' diffusers, since they look something like an egg-crate. For the degree of glare control they provide, they are relatively inefficient (30 -35% less efficient) compared to a plastic or glass prismatic diffuser. Egg-crate diffusers are best suited to areas where extreme dirt build-up is a problem.

Exit Light Conversion

Exit lights must be illuminated 24 hours a day, 365 days a year. So converting exit sign lighting from incandescent lamps to compact fluorescent lamps can give you significant energy savings because compact fluorescents use up to 80 per cent less energy than incandescents.

Compact fluorescent lamps last longer: 10,000 to 15,000 hours, or about two years in continuous service, compared to 1,000 hours for standard incandescent lamps. That means less frequent lamp replacement and lower energy costs.

A typical exit sign with 2-20 watt incandescent lamps retrofitted with two-5 watt compact fluorescent lamps will save $12.25 per sign in energy costs alone.

Converting the 13 incandescent Exit Lights in your Recreation Centre could **save you $160.00 per year.**

Power Smart: EE Ballast Rebate Program

To make the conversion to EE Ballasts even more attractive, B. C. Hydro is now offering an Energy Efficient (EE) **Ballast Rebate** to contribute toward the higher initial cost of an Energy Efficient Ballast. **B.C. Hydro will rebate $1.00 for every EE Ballast** replacing a standard ballast. There are also rebates available to encourage the purchase of electronic EE Ballasts under the Custom Option rebate.

Please contact our Ray Denby at 293-7780 or our local office for further information or application forms.

Power Smart: HID EE Lighting Rebate Program

To make the conversion to Energy Efficient HID lighting (Metal Halide or High Pressure Sodium) even more attractive, B. C. Hydro is now offering an **HID Lighting Rebate** to contribute toward the initial cost of your conversion to 100 Watt and up HID luminaires. **B.C. Hydro will rebate $500.00/kW of energy saved** up to 50% of the cost of the new luminaires.

Please contact our local office for further information or application forms.

OTHER LIGHTING IMPROVEMENTS

Clean Luminaires

The efficiency of your lighting system can be improved by adopting a regular cleaning procedure. Dirt on these fixtures can reduce light levels by 10 to 15% or more and cleaning is important in maintaining light levels and ensuring you get all the light you are paying for. This may be particularly important and applicable considering energy-efficient lamps reduce light output slightly.

If all lamps are replaced in one operation to reduce labour time (group relamping), this is an ideal time for cleaning. Be sure to use a **non-static, non-bleach** cleaner (or dirt and yellowing may increase).

Improving Lighting Efficiency with Paint

It is well-known that white or light colours reflect more light than darker colours but the effect of colour on lighting system efficiency is not as well known. As an example, to provide equivalent light levels, it would require 15% more luminaires in a room with medium reflectance values - ceiling 50% and walls 30% - compared with a room with good reflectance values - ceiling 80% and walls 50%. White, off-white or light pastel colours have a 60 - 90% reflectance value while dark tan/light brown will be more like a 30% reflectance value.

This does not mean everything should be painted white, and in fact excessive glare can result from glossy painted surfaces. However, you should plan with the idea of providing significant areas of bright or light colours in a room to minimize the electrical lighting loads.

The Arena Lobby is one specific area where reflectance values appear to be fairly low, although this recommendation should be considered in all your buildings when renovating, redecorating or constructing.

Group Relamping

In 1989 you replaced the lamps in Arena #2 (along with the ballasts) as a 'group relamp'. We recommend you implement group relamping on your major lighting systems. Group relamping means all lamps in an area are replaced at specific time intervals, even if they still work. While it may seem wasteful, savings are generated in a number of ways:

Overall labour costs are reduced since set-up and travel time is much smaller proportionately than individual (spot) replacement (estimates for reduced labour costs from this method are from 80 to 90%);

Work interruptions caused by individual replacement are lessened (relamping can be done during non-operating hours), and;

The actual number of lamps needed may be reduced by as much as 15% since average system light output will be higher with lamps replaced before the end of their rated life. As lamps age, their light output decreases (by the end of their rated life often dropping 25% from initially installed levels).

There are a number of factors that influence the most economic relamping schedule. If you have questions we recommend you contact a qualified lighting maintenance contractor or your lamp supplier who have computer programs available to determine the most economical group relamping schedule for your facility.

OUTDOOR DECORATIVE/BUILDING SECURITY LIGHTING

Place Outdoor Incandescents on Timer or Photocell

Automatic switching controls could reduce your outdoor incandescent lighting operating hours (outside the North door by Arena 2) when not required. Annual **savings of $80.00 per year** (@ 5 cents/kWh) would result if the 6 - 60 Watt incandescents were shut off during the daylight hours. In addition, the life of the lamps would also be extended by the number of hours they are shut off.

AUTOMATIC CONTROLS

Install Occupancy Sensor - Dressing Rooms

In areas that are used seldom, and then only for brief periods of time (such as the Dressing Rooms), lights are often on, but used relatively little. Because the area may be unoccupied for long periods of time, the lights may be on for many hours before someone notices. An ideal control for this situation is an occupancy sensor. These sensors automatically turn on the lights when someone enters the area, and turn them off again when no movement is detected, after the person has left.

Consider an occupancy sensor to reduce the hours of operation in Dressing Rooms 1 to 4 by 90 hours per week in each room (current operating hours for Rooms 1 and 2 are estimated at 140 hours/wk., and Rooms 3 and 4 @ 126 hours/week). **Savings will be $130.00 per year** (@ 5 cents/kWh).

MOTORS

Install Energy-Efficient Motors

High-efficiency (HE) electric motors offer a long-term solution to reducing energy costs. HE motors deliver the same output as a standard motor but consume up to 10% less energy. Since an electric motor uses four to eight times its purchase price in energy every year, the premium paid for the HE motor is a good investment.

We have costed savings from converting a number of standard efficiency motors to High-Efficiency motors and using various operating hours/week. Annual **savings from motor conversion would be approximately $2,360.00 per year.** See **APPENDIX D** - ENERGY EFFICIENT MOTOR CONVERSION SAVINGS for details.

Power Smart: High-Efficiency Motors

The High-Efficiency Motor Program is a reward for being more efficient. The greater the efficiency of the motor you install (compared to an industry 'standard' motor), the greater your rebate. You get $400 for every kilowatt saved, up to a maximum 20% of the cost of the motor.

For example, a standard 100 h.p. motor with an efficiency rating of 90.7% replaced with an energy-efficient motor with a rating of 93% will earn you the minimum rebate of $800. A new motor with a rating of 93.8% will give you a rebate of $1,087. And you start saving on energy costs right away.

Please contact Ray Denby or our local office for further information or application forms.

Investigate Staging of Compressors

The compressors are apparently not set up where one will operate until the load cannot be met, then another starts. This can impact on your demand charges and give relatively poor performance for your system re electrical efficiency. Consider staging these compressors to reduce your costs and reduce the start/stop cycling on the motors.

Summer Operation of Brine Pumps (Costing)

During the course of the audit it was mentioned you are considering running the brine pumps continuously throughout the summer. We would like to point out the energy costs associated with this measure.

With two brine pumps (one at 25 H.P. and one at 20 H.P.) operating 24 hours/day, 14 weeks/year (summer) and 5 cents/kWh, the approximate **cost of operation will be $4,000 - $4,500 for the summer.** Please consider other methods of avoiding the problem (eg. manual cleaning of the nozzles, flushing, etc.) and their costs before implementing this measure. You have suggested the actual summer 'down' time may be closer to 5 months or 20 weeks. This would give a cost of 20/14 x $4,000 = $5,700.00

DOMESTIC HOT WATER

All natural gas hot water savings are calculated assuming $4.21 for one Gigajoule of Natural Gas, and a system efficiency (delivered to the end use) of 63%. While you have heat recovery on your hot water systems, savings are valid as the load that cannot be met by the recovery system are met by the natural gas heating system. Since you consistently run out of hot water the measures indicated following may in fact not save the dollars indicated but instead give you more hot water.

Reduced Flow Shower Head Savings - (Each)

The shower heads in the Centre are the typical head type with a flow rate of around 0.4 litres per second. Reduced flow shower heads have a flow rate of around 0.16 litres per second, and with quality heads made by the major manufacturers it is difficult or impossible to tell the difference between the two flows.

Cost of a shower head should be around $10.00 - $20.00 and **savings of $31.00 per year** will be realised (based on use of 15 minutes/day, 7 days/wk., 38 wks/yr. and water temperature of 42 Deg.C).

Note this number is an estimate only and if use is 20 minutes per day (average), savings will be 33% higher.

Lower Water Temperature in the Ice Cleaning Machine

The temperature of the water used to flood the ice is approximately 60 Degrees C. (140 Degrees F). Reducing this temperature by 10 Degrees C. will result in **savings of $810.00 per year** in hot water heating costs (@ 450 Litres per flood, 24 floods/day, 38 weeks/year. Lower temperatures can give a good flood, but this measure should certainly be sampled in a number of months with varying outside temperatures. The lower temperature may not be satisfactory in extremely cold winter months, but be perfectly acceptable for most other times of the year. Lower flood water temperatures may even be better than high temperatures if fogging is a problem in the arena, since there is less evaporation at lower temperatures. Moreover, lower water temperature also reduces the load on refrigeration compressors.

Reduce Quantity of Ice Flood Water

The ice-resurfacing machine typically returns from floods with water left in the machines' tank. This water then cools off before the next flooding. We have calculated the amount of savings if you can reduce this water 'over-fill' by 90 Litres per flood (20 Imperial Gallons). If water is used at 60 Degrees C., and cools to approximately 10 Degrees C., **savings of $810.00 per year**, can be realised in reduced water heating costs.

BUILDING ENVELOPE

Weatherstripping and Caulking

Weatherstripping is an important part of a building's energy conservation program. As a piece of equipment, it wears out fairly quickly, particularly where the door or window gets a lot of use. Door weatherstripping in a building like this may need to be replaced as often as every year. Weatherstripping should at least be checked every year, and replaced as necessary.

WEATHERSTRIPPING SUMMARY

The following door weatherstripping conditions were noted in the weatherstripping review:

Location	CONDITION		
	Sides	Top	Bottom
Pottery Room	none	none	none
Front Door	poor	okay	poor
Meeting Room	good	good	good
Smoking Room	good	good	good
Cafe (West)	good	good	good
Pool Room	good	good	good
Seniors Door (South West)	poor	okay	poor

Weatherstripping on the compression (hinge) side of doors and windows should be placed on the door frame itself, not on the 'face' as the other three sides.

Shutting Off Gas Radiant Heaters

Consider putting the gas radiant heaters in the arena on a timer. They apparently operate from 1 p.m. to 8 p.m. unnecessarily. Savings were not costed out for this measure but implementation could be done manually and savings could be significant.

Low Emissivity Ceilings

We have included this brief discussion of a recent (in the past five years) option arenas have installed, known as a low emissivity ceiling (LEC). Although the ceiling is usually installed in an attempt to correct a specific problem, it has been found the LEC is useful in improving many other aspects of arenas. These ceilings help in reducing heat radiation from the ceiling, eliminating obvious problems like fogging on sunny days. Less obvious are other benefits which have been noticed: pick-up times to bring the brine down to normal temperatures have been reduced by 50% (possible savings from allowing the temperature to rise at night); dripping condensation from the ceiling is eliminated; and illumination levels are improved (possible savings from reducing lights). Even without considering potential lighting savings, electrical use in refrigeration has been reduced by as much as 22%. One item to review before installation of an LEC is the present condition of the roof structure, and any problems in this area must be corrected before considering an LEC. Typical installed Low Emissivity Ceiling costs are around $30,000.

MECHANICAL SYSTEM MAINTENANCE

Check and Clean Filters (Heating, Ventilating and Air Conditioning Systems)

The filters in the HVAC system should be checked and cleaned regularly. To determine how often would be optimum, have them checked regularly once a month for about a year, then decide on the frequency of cleaning required for this building. Dirty filters reduce the amount of heated air that can flow to the various areas in the building, ultimately requiring the heating system to run longer to provide the required amount of heat. When filters are clogged, fan motors require greater energy input because of the higher resistance to air flow.

Recommended Maintenance

Following are a number of recommended maintenance steps for the Port Coquitlam Recreation Centre, to maintain comfort, equipment life, and reduce costs.

<u>Every Month</u>
Check filters and replace or clean if necessary

<u>Every Six Months</u>
Check settings of control points for HVAC system. Document.
Lubricate motor and drives (as per specs) to reduce friction
Check time clock settings

<u>Every Year</u>
Tighten belts and pulleys to reduce losses due to slip
Check bearings on motors and replace as necessary
Check dampers for correct operation and positioning
Check seals on dampers (particularly outside air dampers)
Ensure heating and cooling coils are clean
Ensure no obstruction of heaters, diffusers, and return grilles
Check weatherstripping on main doors and opening windows
Check operation and clean photocontrol covers

<u>Every Two Years</u>
Group relamping time? Actual time depends on lamp type and annual hours of use. Clean diffusers and fixtures with non-static cleaner

Check space temperatures and rebalance air systems if necessary to minimize overheating or overcooling of specific areas.

ENERGY MANAGEMENT ADMINISTRATION TASKS

Top Management Commitment. All energy conservation programs have a common feature that comes first on the list, commitment from top management. From making decisions about energy options to gaining cooperation of employees and staff, management needs to be committed. Consider distributing a newsletter notifying staff that the administration is committed to reducing energy consumption, while increasing comfort, and ask for their support and comments.

Charting Progress. Information telling staff about results from the conservation program should, above all, be clear, concise and easy to understand. Graphs, drawn by hand or by computer, are about the best way for everyone involved to quickly absorb how the program is working. Calculated numbers (for example, gigajoule per degree day for gas, or kWh per degree day for electricity) should be used consistently and complicated factors left for technical staff and omitted from the employee information aspect of the program.

The statement "Our electricity costs have been reduced 10% in the past 9 months alone" gets better support than explaining how "kilowatt-hours per normalized degree day period per cubic metre of building, were reduced 10%".

Staff Follow-up. Your staff will take a more active part in saving energy if they know how the program is working. If energy use goes up, it may be an incentive for them to try harder or at least ask questions, and if use has gone down, they can feel rewarded. This is one of the more important aspects of an overall energy management program.

Charting Progress. Information telling staff about results from the conservation program should, above all, be clear, concise and easy to understand. Graphs, drawn by hand or by computer, are about the best way for everyone involved to quickly absorb how the program is working. Calculated numbers (for example, gigajoule per degree day for gas, or kWh per degree day for electricity) should be used consistently and complicated factors left for technical staff and omitted from the employee information aspect of the program.

The statement "Our electricity costs have been reduced 10% in the past 9 months alone" gets better support than explaining how "kilowatt-hours per normalized degree day period per cubic metre of building, were reduced 10%".

Staff Follow-up. Your staff will take a more active part in saving energy if they know how the program is working. If energy use goes up, it may be an incentive for them to try harder or at least ask questions, and if use has gone down, they can feel rewarded. This is one of the more important aspects of an overall energy management program.

Setting Goals. After you have assessed energy use patterns and where most energy dollars are going, specific goals should be set. These goals can be both **short-term** (1 year or less) and **long-term** (1 to 5 year) goals. Many successful energy conservation programs direct efforts at specific tasks or projects, one at a time. The goals should include an estimated per cent energy use reduction, and this should be known by the employees. Long-terms goals usually involve reductions of 10 - 30%, but employee participation usually works better if short-term goals are stressed. There is a sense of satisfaction and "pulling together", for both management and staff, that comes from setting achievable goals.

ENERGY MANAGEMENT GRAPHIC AIDS

- Wall Switches

Stickers are available that fit over light switches to remind employees to switch off the lights to save energy.

RECORD KEEPING

Monitoring Energy Data

Once management is committed to taking steps to reducing energy use, the first component of all energy management plans is analyzing current energy use and monitoring it as an ongoing process. We recommend you set up a system to facilitate monitoring energy use in your Recreation Centre, either using municipal staff, or using a private service. Document the following information from the bills:

- Meter number and file number for the building
- Date the period begins
- Date the period ends
- kWh use
- kW (demand) use
- Power Factor

Divide kWh use by the number of days in the period to determine an average kWh use per day and compare with the period before. Demand use and power factor can be used directly as listed on the bill and compared. Ideally, kWh and kW will not go up without good reason, while power factor should not go below 90% or you will pay a penalty.

Use the data to create tables listing important information, and distribute summaries to concerned individuals. It is difficult to attribute direct energy savings to monitoring, but it is important as other types of bookkeeping. Monitoring energy use serves many purposes in an energy management program:

- help establish if and when closer examination of energy use is necessary
- determine whether components such as energy conserving equipment and insulation are performing as claimed
- detect equipment malfunction that costs you money
- identify where most energy is used, (ie.) where to look first for savings, and gives an idea of what the savings might be
- avoid penalties by ensuring power factor problems do not slip by unnoticed

Tracking Maintenance Data

Maintenance. To allow HVAC problems to be tracked, you should require that all work done be recorded, whether or not maintenance work is contracted out. We suggest using a coil-bound book to keep all records intact or, if records are loose-leaf, ensuring that copies are sent to the municipal hall for filing.

FURTHER B.C. HYDRO ENERGY CONSERVATION SERVICES

In addition to this walk-through audit, B.C. Hydro offers other assistance, from printed material to seminars, to help solve your energy conservation problems.

For further information on options that may be available to your municipality on reducing energy costs, contact Ray Denby at 293-7780 or the Commercial Energy Management Department (Vancouver).

CONCLUSION

We hope this energy audit will assist you in reducing your energy use in this facility and you will be able to use general principles outlined for this building to save energy and money in your other buildings. We would like to thank at this time the various people who provided assistance during the audit, and in particular Dennis McInnis, Assistant Foreman.

We will be contacting you in approximately six months to discuss your energy management program progress. In the meantime, if you require additional information on this audit or other Power Smart programs, please don't hesitate to call.

Thank you for the opportunity to discuss energy conservation with your municipality.

G.P. Lysyk
B.C. Hydro
Area Manager

ELECTRIC HISTORY

NAME: CITY PORT COQUITLAM
ACCT: 14-5170-14501
RATE: 1211

LOCATION: 2150 WILSON AVE
DISTRICT: PORT COQUITLAM CITY
SIC: 8. OTHER

-BILLING- -PERIOD-	READ DATE	DAYS	DEMAND	ENERGY (KW.H) TOTAL	ENERGY (KW.H) DAILY AVERAGE	REVENUE	PF SURCHARGE	TAX	TOTAL	PF	LF	¢/KWH
1990JAN	25JAN90	34	480	274,800	8,082	10,168	0	610	10,778	91	70	3.92
1989DEC	22DEC89	59	480	481,800	8,166	18,315	0	1,099	19,414	91	71	4.03
OCT	24OCT89	29	456	225,000	7,759	8,436	169	516	9,121	88	71	4.05
SEP	25SEP89	32	456	214,800	6,713	8,171	327	510	9,008	86	61	4.19
AUG	24AUG89	63	420	197,400	3,133	9,896	396	617	10,909	85	31	5.53
JUN	22JUN89	26	144	43,200	1,662	1,957	39	120	2,116	89	48	4.90
MAY	27MAY89	31	180	58,800	1,897	2,549	0	153	2,702	90	44	4.60
APR	26APR89	23	240	58,800	2,557	2,572	0	154	2,726	94	44	4.64
MAR	03APR89	40	456	316,200	7,905	11,669	0	700	12,369	91	72	3.91
FEB	22FEB89	28	468	222,000	7,929	8,426	0	506	8,932	92	71	4.02
JAN	25JAN89	34	456	250,800	7,376	9,107	0	546	9,653	91	67	3.85
		365	376	2,068,800	5,510	81,098	931	4,921	86,950	90	58	4.37
1988DEC	22DEC88	28	456	220,800	7,886	8,327	0	500	8,827	91	72	4.00
NOV	24NOV88	30	444	221,400	7,380	8,275	0	496	8,771	90	69	3.96
OCT	25OCT88	28	432	215,400	7,693	8,050	161	493	8,704	88	74	4.04
SEP	27SEP88	34	432	226,200	6,653	8,658	346	540	9,544	87	64	4.22
AUG	24AUG88	29	228	70,800	2,441	3,134	282	205	3,621	84	45	5.11
JUL	26JUL88	33	162	60,000	1,818	2,479	0	149	2,628	90	47	4.38
JUN	23JUN88	28	156	57,600	2,057	2,382	0	143	2,525	91	55	4.38
MAY	26MAY88	63	456	229,200	3,638	11,131	0	668	11,799	92	33	5.15
MAR	24MAR88	29	438	235,800	8,131	8,615	0	517	9,132	91	77	3.87
FEB	24FEB88	29	432	237,600	8,193	8,628	0	518	9,146	91	79	3.85
JAN	26JAN88	34	432	265,800	7,818	9,361	0	562	9,923	91	75	3.73
		365	370	2,040,600	5,792	79,040	789	4,791	84,620	90	63	4.25
1987DEC	23DEC87	29	468	236,400	8,152	8,801	0	528	9,329	90	73	3.95
NOV	24NOV87	32	468	256,200	8,006	9,316	186	570	10,072	89	71	3.93
OCT	23OCT87	29	420	226,200	7,800	8,263	165	506	8,934	88	77	3.95
SEP	24SEP87	31	270	132,600	4,277	4,979	199	311	5,489	86	66	4.14
AUG	24AUG87	32	360	86,400	2,700	4,288	86	262	4,636	88	31	5.37
		153	397	937,800	6,187	35,647	636	2,177	38,460	88	64	4.27

APPENDIX A

GAS HISTORY

NAME: CITY PORT COQUITLAM LOCATION: 2150 WILSON AVE
ACCT: 14-5170-14501 DISTRICT: PORT COQUITLAM CITY
RATE: 0000 SIC : 8. OTHER

-BILLING-PERIOD--		READ DATE	DAYS	--CONSUMPTION (GJ)-- MONTHLY	12 MONTHS RUNNING	----REVENUE ($)---- MONTHLY	12 MONTHS RUNNING	$/GJOULE
1990	JAN	25JAN90	34	435	2,679	1,836	11,335	4.22
1989	DEC	22DEC89	59	670	2,708	2,829	11,458	4.22
	OCT	24OCT89	29	140	2,759	594	11,672	4.24
	SEP	25SEP89	32	43	2,785	184	11,781	4.32
	AUG	24AUG89	63	96	2,818	413	11,922	4.31
	JUN	22JUN89	26	55	2,804	235	11,862	4.29
	MAY	27MAY89	31	90	2,815	384	11,908	4.27
	APR	26APR89	23	99	2,914	419	12,325	4.24
	MAR	03APR89	40	562	2,959	2,373	12,513	4.22
	FEB	22FEB89	28	490	2,822	2,068	11,937	4.22
	JAN	25JAN89	34	464	2,773	1,959	11,730	4.22
			365	2,708		11,458		4.26
1988	DEC	22DEC88	28	392	2,953	1,655	12,345	4.22
	NOV	24NOV88	30	323	3,074	1,363	12,765	4.23
	OCT	25OCT88	28	167	3,081	708	12,742	4.24
	SEP	27SEP88	34	81	3,119	345	12,871	4.27
	AUG	24AUG88	29	31	3,123	136	12,876	4.36
	JUL	26JUL88	33	48	3,093	206	12,748	4.31
	JUN	23JUN88	28	71	3,046	303	12,542	4.28
	MAY	26MAY88	63	392	2,975	1,660	12,239	4.23
	MAR	24MAR88	29	348	2,583	1,468	10,579	4.22
	FEB	24FEB88	29	457	2,235	1,927	9,111	4.22
	JAN	26JAN88	34	644	1,778	2,574	7,184	4.00
			365	2,953		12,345		4.23
1987	DEC	23DEC87	29	532	1,134	2,149	4,610	4.04
	NOV	24NOV87	32	343	603	1,397	2,461	4.07
	OCT	23OCT87	29	201	260	819	1,064	4.08
	SEP	24SEP87	31	59	59	245	245	4.15
			121	1,134		4,610		4.09

APPENDIX A

APPENDIX B

LIGHTING: OPERATING HOURS DATA

Location	Old Lite	Old Watt	New Lite	New Watt	# of lite	DELAMP	Old Hrs Wk	New Hr Wk	Wk Yr	EE BALST	New Sys # of Lite	
WILSON CENTRE												
Pottery Room	F40/CW	93	EE 'F40'	79	32	4	50		52	y		
Entrance	F40/CW	93	EE 'F40'	79	4	1	168		52	y		
Outer Office	F40/CW	93	EE 'F40'	79	2		40		52	y		
Wall lights	Incand.	60	C.F.13W	17	3		40		52			
Reception	F40/CW	93	EE 'F40'	79	4		84		52	y		
Reception	Incand.	75	C.F.13W	17	2		168		52			
Entr. Halls	Incand.	75	C.F.13W	17	7		168		52			
Mtg. Rm #1	F40/CW	93	EE 'F40'	79	12	1	40		52	y		
Mtg. Rm #1	Incand.	100	C.F.18W	26	4		40		52			
Mtg. Rm #2	F40/CW	93	EE 'F40'	79	12	1	84		52	y		
Mtg. Rm #2	Incand.	100	C.F.18W	26	3		84		52			
Cafe	F40/CW	93	EE 'F40'	79	13	2	84	40	52	y		
Cafe	Incand.	100	C.F.18W	26	4		84		52			
Pool Tbl Rm	F40/CW	93	EE 'F40'	79	15	3	84		52	y		
Auditorium/1	F40/CW	93	EE 'F40'	79	32	4	84	70	52	y		
Auditorium/2	F40/CW	93	EE 'F40'	79	32	4	84	70	52	y		
Wshrms	F40/CW	93	EE 'F40'	79	2		168		52	y		
Kitchen	F40/CW	93	EE 'F40'	79	10	2	84		52	y		
ARENA #2												
Out North Dr	Incand.	60	No Chg.	60	6		168	84	52			
Lobby	F40/CW	93	EE 'F40'	79	22		168		42	y		
Lobby	F40/CW	93	EE 'F40'	79	75	4	168		42	y		
Ice Surface	Merc.Vap.	450	H.P.S.	305	66		126	100	38			
Ticket Off.	F40/CW	93	EE 'F40'	79	4		108		38	y		
Skate Shop	F40/CW	93	EE 'F40'	79	3		108		38	y		
Concession	F40/CW	93	EE 'F40'	79	9	1	88		38	y		
Dressing Rm	F40/CW	93	EE 'F40'	79	9	1	126	36	40	y		
Hallway	F40/CW	93	EE 'F40'	79	6	2	168		40	y		

APPENDIX B

LIGHTING: OPERATING HOURS DATA

Location	Old Lite	Old Watt	New Lite	New Watt	# of lite	DELAMP	Old Hrs Wk	New Hr Wk	Wk Yr	EE BALST	New Sys # of Lite
ARENA #1											
Foreman	F40/CW	93	EE 'F40'	79	8	2	60	55	50	y	
Meeting Area	F40/CW	93	EE 'F40'	79	18		35		52	y	
Spare Off	F40/CW	93	EE 'F40'	79	2		50	45	50	y	
Co-ordinator	F40/CW	93	EE 'F40'	79	2		60	55	50	y	
Lobby	F40/CW	93	EE 'F40'	79	2		168		50	y	
Young Rm	F40/CW	93	EE 'F40'	79	10		40		40	y	
Lunch Rm	F40/CW	93	EE 'F40'	79	5	1	140	50	50	y	
Ice surface	Metl Hal.	450	H.P.S.	305	40		140	100	38		
Dressing Rm1	F40/CW	93	EE 'F40'	79	2		140	50	40	y	
Dressing Rm2	F40/CW	93	EE 'F40'	79	2		140	50	40	y	
Dressing Rm3	F40/CW	93	EE 'F40'	79	2		126	36	40	y	
Dressing Rm4	F40/CW	93	EE 'F40'	79	2		126	36	40	y	
Compress. Rm	F96/430m	172	EE96/430	142	4		140		52		
Compress. Rm	F40/CW	93	EE 'F40'	79	1		140		52	y	
Compress. Rm	F40/CW	93	EE 'F40'	79	3		140		52	y	
Workshop	F40/CW	93	EE 'F40'	79	6	1	140		52	y	
Mabbot Rm	F40/CW	93	EE 'F40'	79	116	8	91	63	52	y	
Mabbot Rm	Inc.'R'	50	No Chg.	50	24		15		52		
Kitchen	F40/CW	93	EE 'F40'	79	4		84	42	52	y	
Hall/stair	F40/CW	93	EE 'F40'	79	4	1	168		52	y	
Canopy	Incand.	25	No Chg.	25	24		84		52		
Total Bldg	Exit Lts.	40	C.F. 5W	12	13		168		52		
Ice surface	Metl Hal.	450	H.P.S.	305	40		75	45	14		
Ice Surface	Merc.Vap.	450	H.P.S.	305	66		75	45	14		

APPENDIX C

LIGHTING: GENERAL SAVINGS TABLE

Area	Convert to Lamp Type	Hours Reduced	SAVINGS from MEASURE: Reduce Hours	Convert Lamps	Convert Ballast	Delamping
WILSON CENTRE						
Pottery Room	EE 'F40'	0	$0	$51	$36	$48
Entrance	EE 'F40'	0	$0	$18	$13	$41
Outer Office	EE 'F40'	0	$0	$3	$2	$0
Wall lights	C.F.13W	0	$0	$13	$0	$0
Reception	EE 'F40'	0	$0	$12	$9	$0
Reception	C.F.13W	0	$0	$51	$0	$0
Entr. Halls	C.F.13W	0	$0	$177	$0	$0
Mtg. Rm #1	EE 'F40'	0	$0	$16	$11	$10
Mtg. Rm #1	C.F.18W	0	$0	$31	$0	$0
Mtg. Rm #2	EE 'F40'	0	$0	$34	$24	$20
Mtg. Rm #2	C.F.18W	0	$0	$48	$0	$0
Cafe	EE 'F40'	44	$117	$16	$11	$41
Cafe	C.F.18W	0	$0	$65	$0	$0
Pool Tbl Rm	EE 'F40'	0	$0	$37	$26	$61
Auditorium/1	EE 'F40'	14	$95	$71	$51	$81
Auditorium/2	EE 'F40'	14	$95	$71	$51	$81
Wshrms	EE 'F40'	0	$0	$12	$9	$0
Kitchen	EE 'F40'	0	$0	$24	$17	$41
ARENA #2						
Out North Dr	No Chg.	84	$79	$0	$0	$0
Lobby	EE 'F40'	0	$0	$109	$78	$0
Lobby	EE 'F40'	0	$0	$351	$250	$131
Ice Surface	H.P.S.	26	$1,467	$1,818	$0	$0
Ticket Off.	EE 'F40'	0	$0	$11	$8	$0
Skate Shop	EE 'F40'	0	$0	$9	$6	$0
Concession	EE 'F40'	0	$0	$19	$13	$16
Dressing Rm	EE 'F40'	90	$134	$8	$6	$23
Hallway	EE 'F40'	0	$0	$19	$13	$62

APPENDIX C

LIGHTING: GENERAL SAVINGS TABLE

Area	Convert to Lamp Type	Hours Reduced	SAVINGS from MEASURE: Reduce Hours	Convert Lamps	Convert Ballast	Delamping
ARENA #1						
Foreman	EE 'F40'	5	$7	$12	$8	$28
Meeting Area	EE 'F40'	0	$0	$23	$16	$0
Spare Off	EE 'F40'	5	$2	$3	$2	$0
Co-ordinator	EE 'F40'	5	$2	$4	$3	$0
Lobby	EE 'F40'	0	$0	$12	$8	$0
Young Rm	EE 'F40'	0	$0	$11	$8	$0
Lunch Rm	EE 'F40'	90	$84	$7	$5	$33
Ice surface	H.P.S.	40	$1,368	$1,102	$0	$0
Dressing Rm1	EE 'F40'	90	$33	$3	$2	$0
Dressing Rm2	EE 'F40'	90	$33	$3	$2	$0
Dressing Rm3	EE 'F40'	90	$33	$2	$1	$0
Dressing Rm4	EE 'F40'	90	$33	$2	$1	$0
Compress. Rm	EE96/430	0	$0	$44	$0	$0
Compress. Rm	EE 'F40'	0	$0	$5	$4	$0
Compress. Rm	EE 'F40'	0	$0	$15	$11	$0
Workshop	EE 'F40'	0	$0	$25	$18	$34
Mabbot Rm	EE 'F40'	28	$731	$248	$177	$176
Mabbot Rm	No Chg.	0	$0	$0	$0	$0
Kitchen	EE 'F40'	42	$41	$6	$4	$0
Hall/stair	EE 'F40'	0	$0	$18	$13	$41
Canopy	No Chg.	0	$0	$0	$0	$0
Total Bldg	C.F. 5W	0	$0	$159	$0	$0
Ice surface	H.P.S.	30	$378	$183	$0	$0
Ice Surface	H.P.S.	30	$624	$301	$0	$0

APPENDIX D

MOTORS: ENERGY EFFICIENT CONVERSION SAVINGS

We have costed out a sample of savings possible by converting some of your motors to Energy-Efficient types. All savings costed at 5 cents/kWh.

Application	H.P.	Annual Hours	Old Eff.	New Eff.	Demand Savings	Annual Dollar Savings
Compressor #1	60	3500	90.2	93.6	1.80	$315
Compressor #2	60	3500	90.2	93.6	1.80	$315
Compressor #3	50	5000	88.5	93.5	2.25	$563
Compressor #4	50	5000	88.5	93.5	2.25	$563
Brine Pump #1	25	4500	87.7	92.4	1.08	$243
Brine Pump #2	20	4500	86.6	92.2	1.05	$235
Cooling Tower #1	5	3500	81.2	88.1	0.36	$63
Cooling Tower #2	5	3500	81.2	88.1	0.36	$63

BC hydro
Lower Mainland Regional Marketing
FAX (604) 293-7781

22 October 1990

Mayor and Council
District of Port Coquitlam
2580 Shaughnessy St.
Port Coquitlam, BC
V3C 2A8

Your Worship and Council:

Over the past year, BC Hydro has been in contact with all the municipalities in our service area regarding Municipal Energy Efficiency. Our initial contact was a two-fold approach. The municipalities received a letter from John P. Sheehan, Vice-President of Customer Services explaining the Municipal Energy Efficiency Policy and asking that the policy be considered for adoption. We also offered each municipality a complimentary Municipal Energy audit of a municipal facility of your choise to demonstrate potential electrical energy savings. In your municipality, the Port Coquitlam Recreation Centre was audited and showed potential savings of $16,780 annually. We are currently following up your audit with Mr. Tom Jackson, Arena Supervisor to review what savings have been achieved to date.

When the results of your audit were presented to Council, the municipality was asked to adopt an Energy Efficiency Policy. To date over 50 municipalities have adopted the policy and the numbers continue to grow. These municipalities have recognized the need to have a consistent policy in place to ensure that all levels of their organization are committed to energy efficiency.

Enclosed with this letter is the Municipal Energy Efficiency Policy, typical of the statement being adopted by many B.C. Municipalities. It outlines the policy and performance standards we would like to see you adopt. BC Hydro will continue to work closely with your staff to make this policy easy to implement and adapt it to your needs.

We ask your Council to consider adoption of the Municipal Energy Efficiency Policy at your earliest convenience. Our Power Smart Marketing Representative, Doug Fraser at 293-7772 would be pleased to answer any questions you may have concerning this or other Power Smart information.

Yours truly,

G Lysyk

Mr. G. Lysyk
Area Manager
Lower Mainland North

Enclosure

POWER SMART

BC hydro
4940 Canada Way, Suite 201
Burnaby, B.C. V5G 4K6
Telephone:(604) 293-7777
Fax: (604) 293-7781

MUNICIPAL ENERGY EFFICIENCY POLICY

PURPOSE

Reducing the consumption of energy through wise energy management and introducing appropriate energy conservation technology without compromising occupant health and safety will lower operating costs and demonstrate our support for the responsible use of our natural resources.

POLICY

This Municipality is committed to considering the efficient use of electrical energy in the planning and operating of all of the facilities under its jurisdiction.

Each member of management is responsible for the energy efficient operation of his/her area of responsibility, and each employee has a vital role to play in supporting this policy.

To carry out this policy. the Municipality of _____ will:

1. Maintain an active and aggressive energy conservation awareness program among all employees.
2. Consider life cycle costs when purchasing new equipment and when undertaking major repairs to equipment. (That is, products and systems with superior efficiency, which will pay for their premium costs within half of their usable life, will be preferred).
3. Provide, within reason, the best available energy efficient systems.
4. Upgrade existing facilities and equipment to higher efficiency where the change offers a simple payback of five years.
5. Maintain equipment to energy efficient standards.
6. Maintain a continuous education program in energy efficiency procedures and practices.
7. Encourage all employees to suggest and initiate projects that will save energy.
8. Ask all employees to observe established energy conservation practices.
9. Monitor electrical consumption so that energy efficiency goals can be established and performance measured and reviewed annually.

PERFORMANCE STANDARDS

1. All new purchase orders specify:
   - high efficiency motors, transformers and air compressors.
   - adjustable speed drives for all fans and pumps where variable flows are required.
2. All buildings equipped with monitoring type controls to manage electrical use.
3. Lighting systems in new office buildings require no more than 5.0 kilowatt hours per square foot per year.
4. New office buildings operate on a total energy budget of no more than 18 kilowatt hours per square foot per year.
5. Natural gas, where available, is used for space and water heating.
6. All appliances meet the applicable BC Hydro efficiency rating.
7. Conversion where possible of:
   - 40 watt fluorescent tubes to 34 watt tubes.
   - ballasts to energy saving type.
   - incandescent lamps to compact fluorescents.
   - mercury vapor lighting to metal halide and high (or low) pressure sodium lighting.
8. Maintenance of equipment and of lighting undertaken to a level so as to achieve optimum efficiency of operation.

_____

SIGNED BY:

DATE: NOV - 5 1990 | Filed | Tabled

COUNCIL: [ ] COMMITTEE: [ ]

Moved Al Seconded K

I invite Doug Fraser to address Council re Powersmart ✓

Comments:

DATE: DEC 10 1990 | Filed | Tabled

COUNCIL: [X] COMMITTEE: [ ]

Moved Ta Seconded Th

refer to the environmental protection committee ✓

Comments:

DATE: | Filed | Tabled

COUNCIL: [ ] COMMITTEE: [ ]

Moved Seconded

Comments:

DATE: | Filed | Tabled

COUNCIL: [ ] COMMITTEE: [ ]

Moved Seconded

Coments:

THE CORPORATION OF THE
CITY OF PORT COQUITLAM

M E M O R A N D U M

TO: Kip Gaudry, P.Eng.
Deputy Engineer

DATE: December 5, 1990

FROM: Danielle Pagé
Administration

RE: Correspondence from the Canadian Pulp and Paper Association (attached)

His Worship Mayor Traboulay has requested that this material be forwarded to the Environmental Protection Committee, for information.

Note that copies have not been made for the Committee members.

Danielle Pagé

Att.

Canadian
Pulp and Paper
Association

Sun Life Building, 19th Floor
1155 Metcalfe Street
Montreal, Que., Canada H3B 4T6

l'Association canadienne
des producteurs
de pâtes et papiers

Immeuble Sun Life, 19e étage
1155, rue Metcalfe
Montréal, Qué., Canada H3B 4T6

Telephone (514) 866-6621 Telex 055-60690 Fax (514) 866-3035

public information
office

bureau de
l'information publique

November 30, 1990

Mr. Len Traboulay
Mayor
City Hall
2272 McAllister Avenue
Port Coquitlam, B.C.
V3C 2A8

Dear Madam, Sir:

In recent years, environmental issues have become an important part of our political, industrial and social life.

Aware of its responsibilities in environmental matters, the pulp and paper industry of Canada has prepared a brochure which I am pleased to enclose. From the Forests of Canada to the Markets of the World addresses three interrelated issues: the forest resource, mill operations, and recycling.

I trust that this publication will interest you, providing, as it does, an overview of the industry's progress in these areas of vital importance to us all.

Yours truly,

Louis Fortier

Louis Fortier
Director
Public Information Office

/ct
Encl.

British Columbia Round Table on The Environment and The Economy

November, 1990

Dear fellow British Columbian,

I am pleased to enclose the information kit on the British Columbia Round Table on the Environment and the Economy.

This kit includes the brochure introducing British Columbians to the Round Table, its mandate, and its members.

Included also is A Better Way, the Round Table document that outlines the economic and environmental situation in British Columbia and poses a number of questions to help stimulate discussion on sustainable development.

The Round Table has also developed a number of background papers which are listed in the appendix of A Better Way. These have been designed to stimulate discussion during the intial public consultation process and are not intended to show the right or wrong side of any particular issue. They are available upon request.

The Round Table is committed to the concept of public participation. Only by working together and reaching for consensus can an acceptable plan for sustainable development become a reality. Only by the participation of British Columbians from every region, from every sector of the economy and from all parts of society will we be successful in developing a plan than can work for British Columbia.

Both individuals and organizations are invited to make formal presentations to the Round Table, either orally or in writing. We believe that many of these presentations will answer some of the questions posed in A Better Way. In an effort to generate more feedback, a significant portion of the open forums will be used for discussion groups on the issues of land and water use, communities, and energy.

If you require additional information or intend to make a presentation please write or call us collect at 387-5422.

Sincerely yours,

Chuck Connaghan

C.J. Connaghan
Chairman

Market Square 229-560 Johnson St., Victoria, B.C. V8W 3C6 Tel. (604) 387-5422 Fax: (604) 356-9276

THE CORPORATION OF THE
CITY OF PORT COQUITLAM

M E M O R A N D U M

TO: Kip Gaudry
Deputy City Engineer

DATE: November 13, 1990

FROM: Danielle Pagé
Administration

RE: Development of Flax Pulp Mill in Surrey - Environmental Assessment Branch

---

His Worship Mayor Traboulay has asked that this document be referred to the Environmental Protection Committee for its consideration.

A copy of this report is in the Aldermanic Lounge.

Danielle

Att.

Mayor

B.C. ENVIRONMENT
ENVIRONMENTAL ASSESSMENT BRANCH

Province of
British Columbia

Parliament Buildings
Victoria, B.C.
V8V 1X5

November 6, 1990

Dear Sir/Madam:

Arbokem Inc. of Vancouver proposes to develop a 20 tonne per day flax pulp mill in the Port Kells industrial area of Surrey. In accordance with the Major Project Review Process Guidelines (MPRP) Arbokem has submitted a Prospectus to the Major Project Steering Committee (MPSC) for public and government review. The Prospectus document (3 copies enclosed) provides an overview of the proposed project, any potential environmental and socio-economic impacts and possible mitigative measures.

We would appreciate it if you could distribute this document to the appropriate officials within your municipality for review as soon as possible. If you wish to make written comments on the Prospectus please forward the comments by **Friday December 21, 1990** to:

Mr. David Parsons, MPRP Coordinator,
Environmental Assessment Branch,
B.C. Environment,
777 Broughton St.
Victoria B.C. V8V 1X5
Tel: 387-9674
Fax: 356-7183

Arbokem will be holding a public information meeting on **Tuesday November 13, 1990** at the Surrey Inn from 7:00-10:00 p.m. A representative of the MPSC will be in attendance at the meeting to outline the process for public input. Details of the meeting will be advertised in the local and regional newspapers. Additional meetings may be held during the Prospectus review period. All public concerns and comments will be reviewed by the MPSC and considered in the Committee's decision with respect to the project.

If you have any questions please contact Mr. David Parsons.

Sincerely,

Doug Dryden
Co-Chairman
Major Project
Steering Committee
B.C. Environment

Sincerely,

Frank Blassetti
Co-Chairman
Major Project
Steering Committee
Ministry of Regional and
Economic Development

ORIGINAL TO BE SENT BY MAIL